COLOUR IN ART AND DAILY LIFE

M. BERNSTEIN

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BY

M. BERNSTEIN

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COLOUR IN ART AND DAILY LIFE

PREFACE

The following essays were begun a number of years before the War. Notes, jottings after talks with artists, the customary interchange of views and experience of the studios, recollections from journeyings and visits to galleries and to the country, went to the first mooting of them. To these things were added practical experience as a plastic and decorative artist.

Their theme being, as it is, to some extent the material basis of all works of art and the way in which these are produced, they offer the connoisseur and the practising artist a welcome supplement to the many lectures and essays dealing with the finished artistic product.

Colour, as the most difficult of all the realms of art and the one offering the most problems, incites the artist by its uncharted character to draw up his own laws and to observe his results most closely, so as to make them most serviceable to his purpose. And all of this that can be put into words is a standby to the amateur

and professional in dealing with the difficulties of colouring.

When I was moved, therefore, to work up the theme into a course of lectures, which won, as it were, a new standpoint for the observation of art, I met with much encouragement, and the lectures which I gave (with the fullest appliances for illustration) at first in the Municipal School for Females, at Halle on the Saale, and then, early in 1914, at the German Lyceum Club in Berlin, were very well attended.

The outbreak of the War hindered further progress with the subject; and not till 1919 was the course held again, this time for the Continued Training of Drawing Mistresses. It was even attempted to include a digest of my course on colours in the Art History Course in a Lyceum, and the understanding and interest it aroused in the girls proved once again that it was no mere chatter about æsthetics, but a way of approaching the study of art from quite a fresh side, upon which I had embarked.

It is as affording such a new approach that this course of lectures, whose theme—Colour and its Relation to Line, Surface and Form—is the most important thing in Plastic Art, is presented to the public.

The General Survey of the Subject, which comes first, will deal with the general properties of Colour, the Effects of Illumination upon it, the Mutual Influence of Colours, the Correct Proportions for Blending (a thing of the highest importance in practice, both for plastic and industrial art) and the Scientific Theories of Colour, so far as they come within our purview. A number of illustrations are taken from the classics of Modern Science.

In the essays which follow after, each of which has the name of a colour as its heading, the tint in question will be treated from all the standpoints mentioned. Particular emphasis will be laid meanwhile on the Æsthetic Effect of Colour, and this will be illustrated as clearly as possible by reference to works of plastic and industrial art, and to objects in the home and the world at large. The unfavourable nature of the time and the expense of colour-printing has precluded the assistance of coloured plates.

Part II of the volume brings the elements of Line, Surface, and Form into relation with Colour, and in so doing assists comprehension of artistic quality. 'Colour Surface' is specially important in this connexion, involving as it

does the difficult problem of Balance in Colour. The section entitled 'Colour in Space' closes with a short section on Sense of Style.

The work now presented makes no claims to completeness either as regards artistic or scientific material. It purports instead to meet, in easily comprehensive language, a felt want in that section of the contemplation of art, whose appeal is most general.

M. BERNSTEIN

DIESSEN A. AMMERSEE
July, 1921

This book comes before the public in a revised shape. Notice is taken of as much of the recent research in the realm of Colour as is possible. Novelties in art and industrial art have also had every attention. May this second edition meet with as much appreciation as its predecessor!

M. BERNSTEIN

MUNICH, *March, 1925*

PART I

GENERAL SURVEY

1. General Properties of Colour.

UNDER colour is comprehended colour technical and optical. Technical is the colouring material we buy from the colourman, or press out of tubes for employment. Optical is the colour of the world about us as we distinguish it with our organs of sight. Where practical employment or the description of works of art is the question, it is technical colour that is meant, whereas optical colour is meant when we speak of natural phenomena or of scientific effects. The two types coincide in an exceedingly small number of instances.

The representing of natural phenomena requires the mixing of the most various colouring materials together. Our palette contains but an inconsiderable fraction of the many thousands of tints in Nature, and we must content ourselves with translating Nature's variety within the limits at our

disposal. Yet the study of even this limited palette is a comprehensive one. The various methods of the employment of its colours, their mutual influence on one another, and the differences they present as different materials are used as a ground for them, must all be observed with precision.

All colour is dependent on the surface it is laid on. It appears different with every differing stuff to which it is applied : different in the case of velvet from what it appears in that of silk or of linen : different in stone from what it is in wood or paper. What is lovely in one case may be ugly in the other. Much depends on the method of lighting. Some colours must be seen suspended vertically because when the light falls upon them they lose quality. Blue is of this nature. Others are seen better recumbent, because light falling vertically upon them enhances them. This is true of red-violet.

Yellow, red, and blue are known technically as Primary Colours. All others can be derived from them by blending. Green is put together out of blue and yellow, violet out of blue and red, orange out of red and yellow. And precisely here the contrast mentioned

between technical and optical colour is for the first time observable.

Red, orange, yellow, green, blue, violet are colours in the spectrum. They are the colours of the rainbow. Optically black and white are not regarded as colours, whereas technically they play a pretty important part, and are used in the production of brown and grey and in diluting the primary colours.

Admixture of black or white to primary colour dulls it and lessens its brilliancy. This the painter calls working in low tones, which are not to be confused with low colour values. If in a picture there are many colours all deadened to the same degree with grey, it is said to be in low tones or painted 'in tone.' The interiors of Dutch genre painters are examples of low-tone painting: and the colours used in the separate cases are termed 'broken colours.' They were employed with special charm by painters of the Rococo, e.g. Chardin, Greuze, etc.

There are important differences for painters between 'warm' and 'cold' colours. The warm variety contain yellow—yellow is the warm pole of the colour scale. The cold

variety contain blue—blue is the cold pole of the colour scale.

On a colour disc, i.e. a spectrum arranged in the form of a circle, the warm half of the scale extends from yellow-green to red-violet, while the cold half reaches from blue-green to blue-violet. The dividing line passes through both green and violet. The range of warm colours, as we take them from Brücke's colour disc, comprises : yellow-green, pure yellow, orange, vermilion, carmine-red, purple. The cold half comprises blue-violet, ultramarine, turquoise (green-blue), blue-green, spanish-green, chrome-green. The warm colours have a superior luminosity as compared with the cold, and are harder to combine. The colours of the warm half of the disc give us the sense that they are in nearer proximity to us than are the cold. The fact will be referred to later.

Technically all colours can be blended so as to be completely fused to the gazer and so give a new colour. They can be blended, too, optically, only in this case the fusion is consummated in the eye of the gazer. The Pointillists' procedure in painting is based on this second type of

fusion. It was the 'Theory of Colours' of the physicist, Ogden N. Rood, of Columbia University, New York, that first suggested the method af Pointillism; and it was to some English painters it suggested it. The work directed attention to the occurrence of a mixed tone on the white space between two different tints in certain Moorish tile ornaments in the Alhambra. The inference that these Englishmen drew was that blue and yellow splashes placed at intervals on the white canvas would give a greenish-coloured sky; and they found actually that blue and red dots on the white canvas gave the violet shadow they desired to produce, and that yellow and red dots produced an orange coloured lighting in a picture.

2. Changes in Colour through Lighting.

In the first place every colour has an individual quality: i.e. a tint independent of all optical changes and apart from any intention on the part of its user of representing light, shade, or physical space by it: a tint pure as that with which it comes out of the capsule, or as that with which it is employed in self-coloured mural decorations.

The natural tint is subject, however, to various changes through the influence of light.

Sunlight covers every colour with a fine yellow film or transparent hue. We shall enlarge upon the point later (pp. 82–3). The colour is so brightened by the exposure to the sun's rays that it sheds a good deal of its property. Strong gleams on a flat surface neutralize colour quality entirely. The effect can be observed at any time in porcelain, glass, or a watery surface. These are the reflections, as they are called, which are specially pronounced on mirror-like objects.

Even on dull surfaces, however, the falling of daylight dilutes, more or less, the inherent colour quality; and this inherent colour quality is diluted too in shadows by their darkness, and made entirely unrecognizable when the darkness is complete. Distance also has its word to say in the determination of shadow tints: nearer shadows are usually warmer than those more remote: they exhibit something of a ruddy or violet tone, whereas the more remote shadows appear cold blue.

Brücke maintains that all pure colour keeps its quality best in a state of moderate illumination, the amount of change which

takes place in artificial light being conditioned by the colour of the illuminant. Generally speaking we may assert that the tints opposed to the colour of the illuminant disappear, even when they are only components of a mixture: the red beams of the setting sun eliminate the green from a landscape, while the violet tones of twilight and the blue shades of approaching night conjure them forth again.

Out-of-door perspective exercises a strong influence on colours. The trees that seen from close to appear green, and the roofs that so seen appear red, show blue-green to blue or else bluish red to violet, as the case may be (Cf., p. 65). The colour suffers in these cases in tone-value. It forfeits some of its quality. Its luminosity is diminished.

Every colour has a specific brightness, which all kinds of investigators have measured in all kinds of fashions. The physicist Brücke, e.g. measures it by cutting apertures in coloured papers, which apertures at a sufficient distance appear grey and can then be compared with the different degrees of grey on the colour scale according to which they are ranked in the degrees of their brightness.

Yellow is thus brighter than red, and most cold greens brighter than blue. Goethe made the observation that yellow and red are brighter than green and blue. Helmholtz ordered the colours thus in the scale of brightness: yellow—orange—green—red—cyanine blue—ultramarine—violet. Hering ranked them in the following order: white—yellow—red—green—blue—black. He remarked further: 'The brightness curve attains its maximum in yellow, while the curve of white quantivalence (*Weisze Valenzen*) reaches its summit in green.' This white quantivalence appears the principal factor in the determining of colour values,' which Bezold also says are not to be identified with brightness, using the following example to explain himself: 'Supposing one exposes a surface painted vermilion by gradual degrees to a stronger and stronger light, it appears brighter and brighter, and even in full sunlight only a little more whitish (or more yellowish?). If on the other hand one puts a fine white veil over the vermilion surface; or if one mixes white with it (which comes to the same thing) one gets a pale red.'

For explaining his method of measurement

he imagines his colour plate arranged in a circle. All colours have at the circumference their purest, their most unmixed tint: they are mixed, in proportion as they approach the centre, increasingly, with white, which occupies the middle of the table. To produce the different gradings of brightness and of darkness, he constructs the same table over again in diminished brightness, and repeats the operation ten or more times, each fresh disc differing from the one before it in its degree of brightness, so that the last one would have to be, theoretically, quite black. The darker the colours, the smaller the circles, so that finally, when all the circular discs are superimposed, the result is a pointed cone containing all possible tones of colour: showing, when looked at from above, all the brightest colours on the outside, the greyer and whiter ones within; when looked at from the side, all these colours ranged in the order of their brilliancy.

The Hamburg painter, Runge, invented, in 1808, a spherical, instead of conical, way of displaying this ranking of colours. He felt the need in his work of a systematic arrangement of colours to facilitate the

comprehension of their respective values ; and took, it must be noticed, for the decisive factor, not brightness, but blackness and whiteness (*Weisz und Schwarz-gehalt*). He places the pure colours round the Equator of the globe : the white at the North Pole, and on the intervening parts of the hemisphere all colours that are mixed with white ; at the South Pole the black, and in the intervening space again all colours with which black is mingled. About the axis are all grades of grey. Chevreul, director of the Gobelin factories, repeated something like it on a much extended scale, but with less precision, in 1861, for the purposes of the tapestry manufacture.

Wilhelm Ostwald takes the same thing up again in setting forth in his 'Numerical Theory of Colour' principles for the measurement of low-toned sections of colour. As decisive for the value of a colour he takes, first, its white-content, next its black-content, and thirdly its purity, not with Helmholtz and all other physicists, its tint, its purity, and its brightness. He refers the reader to his Colour-atlas, which is arranged on these principles, and in which he revives the Colour pyramid published in 1772 by Lambert.

Fröhlich's 'Principles of a Theory of Light- and Colour-perception' (Jena, Fischer, 1921) gives a clear and easily comprehended exposition of the results arrived at by Ostwald:

'Wilhelm Ostwald has attempted a new exposition of the colours in his Colour-atlas. The opaque colours as a whole form, according to him, a three-fold complexity, since each bright pure tint can be diluted with either white or black to liking. The circle of the pure colours he divides into one hundred parts, beginning with yellow and proceeding thence via orange, red, purple, violet, ultramarine, ice-blue, sea-green, and leaf-green, back to neutrality. The range of his colours corresponds neither to the prismatic nor to the diffraction-spectrum, but is arrived at by the help of suitable apparatus in accordance with the principle of inner symmetry by which differences in number correspond to stages in feeling. Since Ostwald gives us means of fixing by means of a percentage, the black and white content of a passage of colour along with its tint, it is possible now for the first time to determine any opaque colour at will by a six-figured determinant.

In order to limit somewhat the number of colours, of which our eye can detect about a

million, Ostwald divides a double cone, whose apices are black and white, and whose common base comprises the colours of the spectrum with purple added, into 612 bright colours and eight fields with a greyish tinge. We arrive thereby at the possibility of a theoretical doctrine of the Harmony of Colours. Whereas hitherto harmonious blendings have only been found out instinctively, it seems possible now to get harmonious blendings by taking into consideration simple definite relations between tint, white-content, and black-content, the three kinds of value by which the colours in question are differentiated.

3. Complementary Colours.

We come now to the inter-relationship of colours, to the way they affect one another mutually—in which investigation the chief factor is the complementary relation, an elementary acquaintance with which on the part of the reader will be assumed. Brücke, who has invented the schisto-scope for the scientific measurement of colours, fixes as complementary among colours, i.e. those which give white or else grey in combination, the

pairs: red—blue-green; orange—green-blue; yellow—ultramarine; greenish-yellow—violet; and green—purple. Others dissent from him somewhat, but Rood accepts his arrangement; and the very practical Colour-determiner of Kreutzer is based upon it. This is a complete colour-disc, the inner part of which is so fitted to the outer that it can be revolved. The complementaries are placed opposite one another. They are yellow—blue-violet; orange—ultramarine; vermilion—turquoise-blue; carmine-red — blue-green; cinnabar-green—purple-red; yellow-green—purple-violet. If the inner section is so turned that the basal-colour in the inner section is contiguous to the complementary colour in the outer section, then the observation is unavoidable that the collocation of pure complementaries is somewhat harsh and unpleasant to the eye, and that the warm section of the combination domineers over its less luminous and colder fellow colour to such a degree that the latter seems no more than its shadow. This is particularly the case with the yellow and blue-violet, the orange and ultramarine, the vermilion and turquoise-blue, and the carmine-red and blue-green combinations; while cinnabar-

green and purple-red on the one hand and yellow-green and purple-violet on the other seem to hit it off better, and must therefore be comparatively similar in luminosity. In practice it is better for all colours if the complementary relation is somewhat departed from. Helmholtz remarks in 'Optics and Painting': 'The combinations of such colours are, generally speaking, most pleasing, when the second tint in the combination approaches very near to the complementary colour of the first, though even then with a distinct interval.'

Brücke's colour table departs from Kreutzer's in that in blue-green two different shades are recognised (for the range of green, see pp. 27–8), while red-violet and purple are coincident, the effect being that there is produced in the first place a more agreeable and softer opposition of complementaries and in the second place a more favourable collocation for the triads —about which we shall have to speak later, in the chapter entitled 'Colour and Surface.'

Contrasts are often the fathers of optical delusions. There is a physicists' term of

'seeming colours' (*Schein-farben*). A strong-coloured background alters, e.g., the tone of the pattern upon it. Bezold's 'Science of Colours,' e.g. brings it out very clearly: 'Take two discs,' he says, 'or better, two rings of minium-red and lay one of them on a vermilion and the other on a golden-yellow ground, and they will seem so different that nothing but picking them up and placing them together will convince you of their identity. The ring on the yellow ground appears ruddier, that on the red ground more yellowy than each would appear by itself on a grey or black background.' Another passage runs 'Contrasts can originate colours, where none already exist. That is to say that on a neutral background one can alter the tint of colours and in the last resort even raise or depress their brightness and their richness.'

Warmth and coldness in colour also engender such contrasts; as e.g. when yellow-green and blue-green are placed together. Bezold remarks in this connexion: 'The cold colours engender more vivid contrast-colours on a neutral background, such as grey or brown, when that background is brighter: the warm colours, when it is darker. Again, when the

first colour is very bright and the one by it very dark a strong contrast must arise, accompanied by an optical delusion' (Cf., e.g., Correggio p. 85). And for a still further contrast effect remarked on by Bezold, *Vide* p. 178.

4. Harmonious Combinations of Colours.

As against the effects of contrast obtained through the association of complementary colours we term those obtained by combining colours contiguous on the scale harmonious. To obtain these we must call in the help of gentle transitions and reconciliatory tints, and by so doing we can bring about fluid and shimmering effect, like that on watered glasses and in shot silks. In this way we can refute the widely diffused opinion that combinations of colours closely contiguous to one another are unpleasant. So far from this being so, we can say that there is no difference between colours that cannot be bridged agreeably. Generally speaking the harmony in the cold section of the colour scale is greater than that in the warm, which is disturbed by the presence of bright yellow. Colours can be

easily harmonized—green can be harmonized with violet, for example, by means of blue, though greater difficulty is encountered in the other direction when it is sought to harmonize it with red by means of yellow. Halt must be made in any case before the complementary colour is reached. It is best to use those colours only for such transitions which lie between two complementaries. Still better harmony can be achieved between just four contiguous colours—say between yellowish-green and vermilion by the two intervening tones, or between blue-violet and bluish-green. These are transitions through mixed-tones without any opposition whatever of pure colours, though pure colours can be used, if only those are avoided that lie too close together. Utitz says in his 'Principles of Æsthetic Colour': 'Colours which lie more than a sixth and less than two-sixths of the circumference of the colour-disc apart go badly together. Up to a sixth they work with agreement and therefore with harmony; and at more than two sixths distance from one another, they afford a grateful contrast.' This applies only to yellow, red, and blue, however, green, violet, and orange remaining

harmonious. What he says is very fairly consistent with the existence of offensive contrasts—those between orange and carmine, between yellow and yellowish-green, between green and cyanine-blue—to which attention is called by Brücke.

In a broader sense, harmonious effects may be defined also as those which come about between colours which, by reason of their equal luminosity, awaken a feeling in the beholder that they lie on the same surface or that they all stand at an equal distance from his eye. Blue and violet would stand, accordingly, in the last mentioned relation to green, because it and they arouse a similar sense of light in the beholder. Just in the same way the combinations with composite colours like brown-red, brown-yellow, grey-green, grey-blue, etc., are to be termed harmonious. (Cf. p. 210.) For triads and doubled pairs of colours, see p. 207.

5. Proportional and Psychological Considerations.

The importance of the proportions in which colours are blended, as well as the kind of

colour used, is shewn by a sentence from Meier Graefe in his 'Development of Modern Art'—'Roughly speaking, more depends, one might almost assume, on the proportionate amount of one colour to another or several others, than to the kind: and the fact only conceals the never-to-be-over-estimated importance of composition in pictures.' The need of establishing some rule for the allotment of amounts in the blending of colours has caused various investigators to institute balance-measurements among the colours. Even Schopenhauer gave attention to this problem, devising the following fine psychological explanation for the need in his 'Vision and Colour' (*Über das Sehen und die Farben*): 'Just as red and green are the two absolutely equal qualitative halves of the activity of the eye, orange is two thirds of this activity and its complement blue one third. Yellow is three fourths of the full activity and its complement violet only a fourth. The required colour is the complement of the one given. Therefore as much of the full activity of the eye must be lost to it, as its complementary possesses: i.e. it must contain as much of darkness as the latter contains of light.'

Later the rule is formulated by Alfred Lehmann, under the title of 'The Law of Equivalents,' that two combined colours should attract the attention equally; and this will be attained by our giving the less saturated colour a greater extension. He gives twenty experiments in demonstration of his principle.

In general the scientific men of the nineteenth century have seldom encroached upon the æsthetic sphere with their colour measurements about which we spoke in the chapter 'Changes in Colour through Lighting.' We come across brief remarks just incidentally as late as in 1905. C. Baumann says: 'The individual artist is therefore left to his own effort and to his gradually acquired experience. He does not attain to the establishment and deduction for his own use of artistic principles. Our comprehensive literature, which treats all other branches of human knowledge and ability, is completely silent in the artistic sphere.'

If this can hardly be maintained of Line and Form, since there is abundant material on the question of these in Lipps, it is yet still quite true of colour; and the dictum of

Goethe from the year 1807, that knowledge of 'general bass' in painting has long been felt as a want: that there is a lack in the painting world of a formulated and generally accepted theory, such as exists in music, has not lost its point to-day. Only Ostwald approaches somewhat near to the question. He is concerned, as we have seen, with the measurement of the low-toned range of colours (see p. 12) and his tables of colours in the same stages of greyness are to be seen as the result. They present quite rich possibilities in the harmonious combination of colours; combinations which are a delight to the eye, and which can be arrived at scientifically. For industrial art work specially they are genuinely educatory, even if they need not nor can not rivet fetters on genius.

To fill the great gap between cause and effect, between creation and enjoyment, between colour phenomena and delight in the same, scientific facts in the last resort will not suffice; we are dependent on feelings and observations, of which last there are an enormous number to hand from all periods and all peoples. Every artist who has left a record of his findings, be he Leonardo da

Vinci, Albrecht Dürer, Delacroix, or one of the moderns like van Gogh or Kandinsky, gives revelations that we drink up eagerly. Their records are the Bible of every artist and comprise the whole greatness of Art. And among these records, observations on the art of colour are scattered like precious jewels. One of the recorders, who busied himself, however, only on the methodical side with colour, was the master of Life and of Art, Goethe. Everyone who treads this way makes draughts on his ' Science of Colour,' and finds his æsthetic and psychological observations invaluable, even though his optical theses may not be unexceptionable. Anything that he says on the effects or æsthetic combinations of colours is to be adopted without question. It is quite clear that the total effect of colours depends upon the properties of each separate tint and upon the proportion in which the tint occurs. If a warm strong colour, red or orange, e.g. is preponderant in a combination, a restless, disquieting effect will result: if a cold tint weak in luminosity like violet or blue-green is present in great amount, the effect will be quiet and restful, and possibly depressing. It is observable, even, that in

a picture or a surface decoration, a pleasant feeling of stability depends absolutely on the presence of a largish space of cold colour in opposition to a smaller one of warm colour; or upon a largish uniformly-self-coloured background holding a strong contrast of light and dark in balance (cf. Part II, p. 204). It matters not whether the term 'finely distributed spots' or 'good tone-value' is used for the arrangement. Curiously enough it is precisely the colour-blind, and particularly those blind to red and green, who appreciate these things peculiarly. These 'Valeurs,' or 'Tone-values' as they are called in German, or 'dull passages of colour' that Ostwald talks of, must arouse in the colour-blind an agreeable sense of stability. We have approximately the same feeling from a photographic, or black and white reproduction of a picture. Painters are often first sure that their 'Values' are right when their pictures have been photographed. And photography may yet be of considerable assistance to the study of colour balance. It is not impossible that the 'thorough bass' in colour that Goethe yearns for, will be forthcoming through the development of this modern discovery. A

kind fairy has no doubt laid instinctive grasp of these things as a gift in the cradle of the creative artist, to save him the worry of arduous experiment, and he can get along without set study of them. But a little more understanding of the fundamentals of Art would not be amiss in the general public, and would be felt as a boon and a blessing, if it could be induced in that quarter, by the professional.

GREEN

NO colour plays so prominent a part in the world as green. The light green of the meadow, the dark green of the wood, the emerald green of the sequestered mountain tarn, the cold green of the winter sky, the warm green of the mosses of the rock are stock examples of the boundless profusion of green with which Nature performs her operations.

This natural green, however, is no rigidly fixed tint such as we find in the table of colours, but a pulsing, shifting, shimmering fluidum which passes now into one tone, and now into another. No colour varies like green : none has a range so unlimited. On Brücke's colour disk with its twelve divisions green occupies five. Between the outmost limit of blue-green on the one hand, and the outmost limit of yellow-green on the other, there is almost room for the effect of contrast (General Survey, p. 17). Between the brightest and the darkest green there lies a whole world of

difference. Light of a green tinge is the brightest light: the greenish stars shine brighter than the reddish, and a green colour is visible in even the darkest shadow. In twilight pure green preserves its visibility the longest owing to its high degree of content in white. Hering gives to green in the ordinary daylight spectrum the highest white quantivalence (General Survey, p. 10).

The range through which green varies in Nature can be brought home by the experiment by which the well-known German master, Th. Hummel, discouraged his pupils from overlavishness in its employment. Fancy yourself in a spot where there is a gleaming green meadow in the foreground with a somewhat darker but still pronouncedly green wood behind. If you pluck a blade of grass and hold it between your eye and the landscape, you will be surprised to find the blade greener than either meadow or wood, the meadow shading off into yellowish and the wood into bluish or brownish. There is no end really to the variety of the greens in Nature, as Colour-photography can be employed to show. A light plate that will show a projection of a landscape, between the greens

of which we have not seen any particular difference, will exhibit green dots congregated thickly in perhaps one single portion of its surface, while elsewhere differently coloured dots swarm thickly among the greens.

Our impression is confirmed incidentally that it is blue and violet, the tints harmoniously related to green, that tone down the absolute green in Nature, and that it is its contrast-colours, viz., those tints nearest to red, orange, and yellow, that bring it out in all its crudity. The juxtaposition of red and green seems coarse and clownish to a cultivated taste (see p. 61). Red-and-green-striped india-rubber balls or certain Scotch plaids and ribbons are rather indicative of an undeveloped sense of colour.

Harmonious effects are to be obtained by using green in conjunction with blue or violet. These colours and cold green all possess a similar degree of luminosity. For yellowish-green, which is already in the warm half of the colour disk, certain orange tones of like colour-value are the colours to choose for harmony (Harmonious Colour-combinations, p. 18).

No colour sets painters such problems as

does green, and they have devoted special attention to it from time immemorial. The fact is scarcely to be wondered at when its wide distribution in Nature and the ever green background man has on earth are considered.

Applied to artistic decoration we find green first of all in certain ever recurrent primitive colours still to be met with among uncivilized races and among peasants : the new variations that appear continually are a result of advancing civilization. We find greens, of great beauty, in their blue-green register especially, in the coloured glazing of bricks and earthenware that have come down to us from the ancient races of Mesopotamia or of Egypt. The Assyrians employed a fine turquoise green with predilection in the coloured friezes of their royal palaces. An apple green as a background is characteristic of Assyrian painting. The Egyptian partiality for green ornament is shown by the great number of scarabæuses, green vitreous glazes, and stones that have come to light. It plays a great part, too, in the paintings of the antique world. If we know nothing about it in the art of Greece itself, of

whose painting nothing survives save traces of pigment on vases and reliefs, we can see green employed copiously by that Hellenistic school of painting whose epigone efforts we more than admire in the Campanian wall pictures of Pompeii and Herculaneum. Think of 'Satyr and Bacchante' in a house in Pompeii (reproduced quite well in colour in Woermann's 'Hist. of Art,' Vol. I.). Its whole colour charm resides in its greens. It is a regular creation in green. Everything in it is in intimate relation to green : and this, not only because the background is a flat tone of green, but because a special green-sensitiveness in the painter taught him to appreciate the beauty of flesh-tones viewed in relation with the colour.

This sensitiveness is not at all so common a phenomenon in painting. Its manifestation in the Renaissance is confined to Leonardo da Vinci, who however leaves us in no doubt as to its high place in his estimation. Over the portrait of Mona Lisa (Paris, Louvre)—to be had, like all other pictures we mention, unless the opposite is stated, in Seemann's colour reproductions—there is a distinct green-blue layer of atmosphere to which every

single tone in the picture is in relation. In the picture of Saint Anna with two others (Paris, Louvre), this striking basal tone is to be detected. Oscar Wilde's dictum that a partiality for green is a mark of high mental endowment comes here forcibly to mind: likewise that passage in Gabriele d'Annunzio's 'Fire,' about the finely cultivated woman of high breeding—'As I took her one day through the galleries of the Academy, she paused before the first Bonifazio's picture of the "Slaughter of the Innocents." You will remember, no doubt, the green robe of the woman on the ground who is about to be slain by the trooper of King Herod. The tint is unforgettable. She paused long in front of it. She thrilled with rapture at the absolute beauty before her and the intensity of her feeling was revealed in the expression of her face. Then she bade me lead her away, saying: "I cannot look at anything more, Effrena. I must remember nothing but the haunting beauty of this mantle."'

A bit later than Leonardo, the Frenchman Clouet paints portraits with green palette—not with Leonardo's green, however, but with a warm yellow-green for his keynote. His

picture of Claudia, Duchess of Lorraine, is an example (Munich, Pinakothek). Intense Greco comes then absolutely seeking out green in the tones of flesh, mitigating the brutal strife of pure colour with green shades, and saturating shadows with their warmth.

In the art of the Rococo is a sensitiveness to green recalling that of the Hellenistic painters. Watteau's canvases exhibit the relationship of coloured figure to bluish-green that we see on the walls of Pompeii. Every picture of his reveals it. Fragonard too draws his effects from the magic realm of green. The Rococo period loves light airy green shades in its wall decorations and embellishments ; it is only that bad imitators have not always been able to avoid the pitfalls of the saccharine and the cold, and have destroyed our liking for them. In Paris, however, the air is laced with greenery, and a whole apostolic succession of painters has sprung up since to proclaim this green charm and apply themselves to its problems. To confine ourselves only to the Impressionists —names like Courbet, Corot, and those of Manet, Monet, Cézanne later, are world-famous. Among modern painters in

Germany, too, there are masters of the green palette—Hummel, Landenberger, Trübner, Klimt, and to some extent Hodler. And here it is not the mere endless profusion of landscapes piled high with bright green mountains that we are thinking of. Delacroix gives in his diary the dicta of Constable, that it is the composition of his green out of a medley of greens that makes the green of his meadows, and again that it is by treating it as a single tone that poor painters contrive to give their green so little intensity.

Most careful measurement in relation to other colours is required, if green is not to disturb the composition of a picture.

One of the most famous modern masters, whose specialty is the relation of green to flesh-tones, found the amount of green in a meadow spoil the artistic effect of a ring of naked, dancing, rosy figures of children. He slashed the canvas ruthlessly and replaced the bevy with single dancing figures with but little green behind them, with the result that the figures now produced the full-effect he designed with them.

A profuse application of green in this case had interfered with artistic working.

Green is far too powerful a tint to be applied at the artist's discretion. A passage from 'The Science of Colour in Art and Industry,' by Bezold shows it. It runs: 'Trifling modifications in the shade of green require considerable changes in the tones of the complementary colours; which may be one of the reasons why the artistic employment of green is so difficult. The lush green of wood and meadow that so refreshes the traveller's eye in Spring is a stumbling-block to the painter': and again, 'Small alterations in lighting and the alterations in the tone of green that these condition, call for great alterations in the tone of its contrast colours.'

An example of masterly reserve in the use of green and of the way in which two small spots of green can dominate a whole picture, is afforded by Titian's portrait 'The Unknown Gentleman' (Florence, Pitti Palace). The young man with the almost colourless countenance stands out from a dark-brown background. He is in black, and the only colour note is in his green eyes; but that is an unforgettably haunting one.

And what is true for plastic art is true

for that of decoration also. Green, whether in a costume, in a room, or in a show-window, is the dominant factor in composition. A single green silk lampshade can harmonize a whole big room, provided that there is not red furniture. (See the Section on Complementary Colours.)

It is no long time since a pure green in a costume raised a titter. The Italians have a proverb, '*Nel verde la più bella perde*' (in green the loveliest loses). There were indeed periods in which pure green was never to be seen—the last decades of the nineteenth century, for instance. The mentally alert Bieder-meier-zeit, on the contrary, had a passion for bottle-green, a colour that has been out of fashion for long, during a period in which dull olive-green shades, insipid and dirty in effect, have contented the public. The modern Decorative Movement, however, has opened our eyes again to the distinguished and pleasurable charms of pure green colours, so that now again bright green silk costumes are in favour, and now again people are conscious of the fascination a gleam of green exerts in a great medley of other colours. It must be one gleam only, however. Should

there be several fair dames in green in the crowd, there will be a smile of amusement; and should the wearers of these dazzling robes be in the majority there will be howls of execration. Here again is the disturbing effect of green in too great quantity, its attractive effect in moderation.

It was in those happy days shortly before the War that Reinhardt's staging gave us some veritable revelations as to the nature of green. Shall we ever forget that green hedge which Ernst Stern's genius for colour set as background to a brightly-coloured Eastern caravan in the pantomime of 'Sumurûn'? The bluish-green of the hedge seen in constantly shifting contrast to the vivid colours on the passing figures, reinforced by the black silhouette of a mosque on a yellowish darkening night sky, worked with an uneffacable impressiveness such as green alone can originate.

Judith in Hebbel's play of that ilk evoked a feeling that gripped attention equally much, simply by standing in the first act in relief before a blank white wall in a green draping.

The effect of green was arresting again in the great folk-scene in the third act of the

same piece, before the walls of Jerusalem. All colours were represented more than once in the gay miscellany; but one figure was green and focused all glances upon itself to the unification and bracing of the whole picture.

We cannot refrain from giving one further instance—that lovely symphony in green, 'The Green Flute,' that so charmed everyone at the time of its appearance.

Yet just as 'too much' perpetrates deadly ravages everywhere in our effect-loving period, so it does in the world of green. Distinction always is the child of moderate indulgence, and particularly in the sphere of dress. A green trinket, one single green stone worn on black velvet or on a white robe, is enough and to spare in the way of adornment: a big green sash or bow is the 'too much' we have deprecated.

And here is to be observed the importance of material. Green produces its loveliest effects in silk, especially if seen from a distance. On the boards a slender form in green silk gives the indelible impression of a princess: the same form in green velvet suggests lady-in-waiting: in green

calico, serving-woman. Green porcelain comes nearest to green silk in the impression of loveliness, the loveliness seeming to depend in this case on the sense of reflected lights conveyed. Silk and porcelain show the cold reflections which lend a sense of brightness and airiness to material. Green velvet, on the other hand, be it ever so lovely, makes poor dressing material compared with silk. Its light and colour-play is so great that it easily distorts a figure: it represents it as bigger and more indefinite than it is in actuality, and does not always keep its due relation to body and head.

For many a head green is a very effective emphasis. For women with very blonde hair and pink complexions greens airy and bright are very becoming. For those with dark hair and sallow complexion it is the same with the rich and deep tones. But 'careful' is the word for those with reddish hair and high complexion, since the complementary colour is here involved and is attended with dangers. Women with the neutral tinges of hair should never wear green, since in their case there is no adequate balance. Green requires a firm restraining element, otherwise

it diffuses and tends to swamp everything. Here is that same need of careful measurement already mentioned in regard to painting. A whole-green carpet is for this reason a blunder. One has the feeling that the green rises like a flood, so that the chair and table legs have no firm footing upon it. On the contrary green walls are beautiful and evoke a sense of liberation. This is particularly so when the lower half consists of panels of dark wood, which offer a degree of support to the colour. If the lower half of the wall were green, the upper would have to be light and bright, in order that the green might support it: green has not much supporting power in itself: it works best when itself in enjoyment of an assistance. How well a glass cupboard in dark mahogany looks, when the panes are hung with green curtaining; and how well dark-wood furniture looks with green upholstering! How unpleasant on the other hand is the furniture made of light-coloured wood with green facings, found—worse luck!—often in modern domestic interiors—and this, for the reason before advanced, that green must be contained within strong dark enclosures or it tends to scatter! The

chief charm of some old Syrian and old Persian vases in green and greenish-blue derives from the fine lattice of black ornament over them, confining the green ground most harmoniously into compartments. Modern decoration employs black lines on a green background very frequently—delicate lines, to be sure, on curtains and rugs—they must have a slight effect and do not need to support anything.

Viennese art industry in particular has produced delightful effects in black and white with only a touch of green. A green spot is enough; just a knot, a fine line at the edge in the case of velvet; a green stone, or a green chain suffices. That green stones have a fascinating effect, is common knowledge. Some people cannot tear themselves away from the sight of green chains. A green emerald or malachite is many people's favourite jewel. Indeed a green tone can scarcely take a finer shape. The famous Nephrite of the Ancients, known in China as jade, and from which even to-day healing amulets and pyxes are carved, is reckoned from the pure decorative standpoint as the finest of all precious stones. Green glass of

itself and without more aid, conjuring up pictures and thoughts of the Bieder-meier-zeit with a grateful soothing sense of long-extended culture behind it, comes next to jade in the effect it produces.

The beautiful glazings which are to be seen in recent pottery, strike, on the other hand, as essentially modern. For these we have taken a leaf out of the book of Nature, which offers to the gaze so many quickly changing green surfaces—opalescent glasses, pools of water, soap bubbles, butterflies, dragonflies, beetles: the green gleam of just broken metals, or the intense green crust on the patina of buildings roofed with copper—a profusion meeting us at every turn, whether in gentle bluish or in bright yellowish glinting radiance.

The realm of green is without bound or limit. We take it with us and feel its effect in our souls. Green window-shutters on old houses fill our minds with a longing for home. Behind green garden hedges we scent delicious mysteries: we feel transplanted to fairyland in old gardens with their high clipped walls of yew. Between green hedgerows our hastening footsteps are stayed. Green quiet nooks entice us to dreamy contemplation. Green is the

pre-eminent colour in the popular mouth for the expression of quiet and hope. There is no such colour in the world to authors. They are always 'greening' this thing or the other in their language. A hundred verses spring to the memory about it. We are therefore more than justified in treating it as the first colour of all, and in seeking to render some account to ourselves of its nature.

RED

IN contrast to green, red is a warm colour, i.e. in its intensest, fiercest shades it lies nearer to yellow. We speak, it is true, of cold red and may be able to persuade ourselves that as compared with the yellow-reds the blue-reds seem cold. In the spectrum, that we must consider as a circle, blue-red passes gradually by way of violet into blue, while yellow-red passes through orange into yellow. Red has a very wide extension, but is after all not mobile as green. It does not subordinate itself easily to the other colours; nay, it is frequently dominant. But wherever it is, no matter in whatever shade or proportions it is present, it asserts itself. It is so intense a hue, that it always gives the illusion of lying in front of its fellows. Red will always have the front station, or at any rate only orange can successfully compete with it. Large quantities of other colours are needed to hold red in balance. Its contrast colour is green, cinnabar-green the contrast to the warm reds, blue-green to the

cold. Harmonious combinations are hard to arrange with it, as with any other colour on the warm side of the colour circle ; but the different reds may be harmonised with one another.

Nature is very economical of red. She works little in its unmixed variety. Her red flowers or red fruits she hands out to us only on her feast days in summer or in autumn. Against it she even provides protection. She places the red flowers or fruits, like jewels, in a luxuriant setting of green, blue, or grey leafage : and she soon covers the new tiled roofs, which are at first so staring, with a layer of mild violet-brown. A small section of the colour may be lovely for a moment, but where the eye is forced to wander, without rest, over red stone deserts, it finds it unsufferable torture. Too much red affects us with horror. Who could gaze for long upon ' The Pestilence ' by Erler, wrought only of reds and yellows, with a form in streaming red garments for title figure, a form having an unholy red countenance, and hastening along through solitary streets of glowing metallic yellow ? It reminds us of old, forgotten, blood-thirsty periods. And it was in old times that red had the heyday of its culture. From time

immemorial it has been the colour of kings and of fighters. Greek warriors wore red frontlets. On a purple carpet stalked Agamemnon. The shoulders of kings or the brows of warriors alone were entitled to the wearing of purple, the costliest thing then known, whose laborious extraction from the purple-fish was the secret of the Phœnicians. As Semper chronicles, they got the most dark from the mussels of the Atlantic, a violet kind from those of the Italian and Sicilian coasts, a bright red variety from those of the Phœnician and Southern Sea.

There developed in the late Greek period, when prosperity grew more general, an art of dyeing material in every shade of red. The garments found in tombs at Antinoë are almost all in a well preserved red colour. A profusion of the finest patterns were produced at that place—in red-and-white or red-and-black, mixed sometimes with other colours such as green or orange, but with red always as the dominant. Red was the fashionable colour, so to speak, with the belles of Greece.

Burnt red earth is no doubt the colour earliest known. Its use is met with in the pre-historic paintings from the Vesère-thal. Early Attic grave-pillars are painted with this

red. It has been employed also in the staining of statues (Bildwerke). What polychrome remains we possess exhibit on the whole this terra-cotta colour. Semper says that a red gum, called dragon's-blood, which came from India, was used in the staining of the marble slabs in Greece.

So far as painting proper is concerned, our only details are of the Campanian wall-paintings in Herculaneum and Pompeii. We have wonderful paintings, especially from Herculaneum, with red as one among other colours. And there are red painted walls in Pompeii. About these, however, it is difficult to be enthusiastic. Those in other colours seem possessed of superior charm, since the red in the little rooms presses much too close to the beholder, and overwhelms what other painting is present.

The further pursuit of the subject requires a leap over many centuries to the beginning of the Renaissance. Strong red notes of colour, save for lovely red initials in the old missals and in some miniatures painted in monasteries, are rarely found in the Middle Ages. But little red material occurs in Byzantine mosaic : and, as a result, the later painting that owes its

suggestion to the mosiacs has little use for red. Strong red is encountered only when painting begins to flourish in Florence, where dyeing in red was understood.

The first to achieve a conscious colour effect with red and to revel in doing so is Filippo Lippi—in his 'Madonna with the Holy Child' (Pitti Palace, Florence). He devises here a remarkable perspective in red, using crimson in the foreground for the robe of the Madonna, bright red for the lesser forms in the background, and lighter and brighter tones for each subsequent recession. The result is an ineffable cheerfulness, almost gaity, abroad. A beam of sunshine seems to stray into the room from behind and warm the atmosphere, giving a sense of repose in the front, and lively stir in the back reaches of the picture. Like effects are obtained by the Dutch Primitive, the so-called Bauern-Breughel (the elder Breughel mentioned later) through the subtly-felt distribution of the different reds in the smocks of the peasants. His 'Dance of the Peasants' (Munich, Pinakothek) is famous.

The greatest zest in the application of this colour is shown in the High-Renaissance, the days of arbitrary and splendour-loving princes,

and of the equally princely masters of colour, Titian, Rubens, Velasquez, The three are all perfectly individual in its employment. Rubens makes red tell through contrasts, or rather makes his contrasts telling through red. He has warm red shadows and cold blue light in his flesh-tones. The glamour of his painting is resident in these contrasts. Harmony of warm and cold is the keynote of his pictures. Velasquez affects more those tones which are harmoniously related to red, using red in all its values, from most delicate pink to darkest crimson, subordinating his picture as a whole to the achievement of an effect in red, whether, as in the dress of the 'Infanta Margerita' (Prado, Madrid), he puts pink and silver-grey together or, as in the portrait of 'Pope Innocent Pamphili' (Doria Gallery, Rome), a deep crimson with scarlet and white, with a touch of the scarlet only. Titian, lastly, uses red mainly as a factor in composition, his portrait of Charles V (Alte Pinakothek, Munich) being a masterpiece of the technique. On a crimson stool sits the greenish-faced emperor, in black costume. A scarlet carpet covers the floor and fills the greater portion of the background. It is truly remarkable what a peculiar, almost appalling,

feeling of distance—of calculated distance between himself and this owner of half the known earth the beholder gets from this picture: the look of the emperor in life, but also the gulf that separated him from his subjects, is registered by it to eternity.

In Italy there is no sense for red after this flowering. It is only somewhat later, in France and with some Dutchmen like Terborch, Ostade, Pieter de Hooch, that subjects involving red begin to make their appearance again. Famous is that interior by Hooch (Alte Pinakothek, Munich) where the young girl in a red bodice with light falling upon her from above, sits in an easy chair centrally: her red slippers are on the ground by her and red chairs are ranged against the white walls. A dance of light plays about the warm red in the foreground. Black picture-frames and chair-legs give to the composition the necessary black 'spots.' At the end of the eighteenth century in England, continuing the tradition at a time when all the rest of Europe seemed afflicted with red-blindness, Reynolds, Gainsborough, and Romney win new conquests for red by their officers in red uniforms, or gentlemen in red hunting-coats, whose white leather breeches

accord so finely with the scarlet. One can safely assert that their successors did not know how to use red colour: had no sense of its colour value: could not see it pure, but merging into all other colours, just as on certain dull winter days a reddish fog kills all contrasts and distorts all pure colours into something unlike the hue proper to them. Painters know very well that when their eyes are tired, there seems a tinge of madder lake over everything; and it would almost seem that when the last gleams of colour sensitiveness died away, with the feeling for the beauty of green that redeemed the Rococo period, a reddish mist, descending on the world, produced that inability to paint which, but for a few outstanding exceptions, affected the whole of the last century. At any rate a master of red 'spotting' like Spitzweg, in that whole time of decline, appears the rarest of rareties.

It was the art of China and Japan, entering by the gate of England, that made the painters of Europe appreciate red again. There were pure red notes in this art, and a subtle appreciation of red quality. Chinese cinnabar, used in red lacquer, is a lovely pure colour in itself. The red of the flowers of Japan is several shades

finer than our red. A subdued red, set off by black alone, recurs often in Japanese colour prints; and when red is used with other colours in these, it is never strident, so as to stand out of the picture and disturb the fine tapestry effect upon which the charm of Japanese art is founded; any pure bright red is in a grey to black setting, or else balanced by a vivid white obtained by leaving the surface of the paper untouched.

A master who has learnt the decorative use of red from the Japanese is Frank Brangwyn; whose compositions, thanks to his genius for red 'spotting,' are extraordinarily effective. He makes a red 'spot' the focus of a design that has usually something of Japanese suggestion about it, ranging yellowish, or brownish, or reddish tones about his vivid red centre. Hans von Marées does the like. So also Garri Melchers, though not so successfully for his composition. His red is of extraordinarily beautiful quality, but he often sacrifices his composition to it, setting it without adjustment to the rest of his picture. Munch, besides other modern painters, has taken up the same problem. His 'Bridge,' which shows his fine genius for disposition, is a decorative

fresco painting. In it the red clothing of the three children on the bridge in the foreground, counterbalances the solid carefully painted background, of the moonlit greenish houses and trees that are mirrored in the water. The red keeps its predominance, although these other elements are strongly and emphatically rendered.

In daily life a figure in red attracts the attention. There is no ignoring it. It quickens the pulse peculiarly. Dressed in red a child delights and cheers as does a flower : a grown-up stirs curiosity. In Italy the gaze is riveted sometimes by a group of ecclesiastics in bright red. The Catholic Church employs red plenteously, and knows the impressiveness it has for the multitude. What is there more dazzling than a Church hung with red velvet ? By what can a sense of pomp and circumstance be evoked more securely ? The royal, the imperial, the martial seizes on red to express itself : on crimson for majesty, on scarlet for triumph. We should know a room at court for royal merely by its red interior. Recall Prell's picture 'The Court of a King,' in Dresden.

We have all learnt by experience what

great a part red cloaks, red carpets, red uniforms, and red robes play on solemn occasions. And if post-war events have given red a new innings in a way not strictly germane to the purposes of this book, one point we have made about red is at all events illustrated, its horror-inspiring effect, which makes it dear to the movers in all revolutions.

That it should not find much favour domestically, and that modern art industry should have little use for it, is not surprising. The reds one sees in furnishings are imitative of all the styles of the past, from Romanesque to Rococo and Empire. If one meets with no successors to these styles it is perhaps that good red dyes are no longer forthcoming : the madderwort, the cochineal insect, the purple snail, as sources, have long belonged to the domain of the legendary. The gangrenous reds of the early aniline manufacture are only now beginning to make way to something better. There have been some finely-tinged dress-materials of late—velvets, e.g. hardly distinguishable from the genuine products of old. Modern technical industry would do well to take advantage of their reappearance : red is so serviceable for indoor decoration. It

is a fast colour to begin with, that always stays down, and is therefore pleasing at all times for a floor or a carpet. A red Persian carpet is always, so to speak, *the* thing for its purpose, whether brown, yellow, or any other colour is interwoven in its texture, provided always that the red note is predominant. A red stone flooring in like manner, as still found in old churches and in entrance-halls to houses, is especially decorative. And red seating is pleasant, because of the feeling of rest on the firm earth the red colour awakens. We find it in all varieties—in earlier periods in wood framing, which is sometimes brown and sometimes gilded : from the Renaissance time onwards upholstered frequently with heavy damask or velvet. The last survivals are the plush sofas of the forties or fifties of the last century. Recent red furniture is mostly without wood enclosure and more massive and more heavy in the upholstering. The so-called club chairs, with red leather covers, fulfil every requirement as to solidity.

For walls, red requires care. That firm-ground feeling so desirable underfoot is here an occasion of stumbling. It gives a feeling

of imprisonment, limits the prospect, gives the eye too prematurely its horizon. For small rooms red is impossible: but it can be very effective for large ones, especially when the white ceiling is low and gives the red a sufficient counterpoise. How oppressive the feeling in rooms with fittings of red wood, with possibly breast-high red partitions, to divide up its spacing, and with an endless succession of red chairs and tables, which assail the retina murderously. Red wood is now not much used whether for doors or for bannisters privately: it spells boarding-house. It is only sufferable if polished and like lacquer, when the gleaming surface gives so many cold and airy reflexions, that we are not aware of the red's proximity. You fancy you can almost see into the red, especially in the case of scarlet and vermilion; with crimson it is somewhat different. The vermilion lacquer of China and Japan is perhaps the most expensive of all materials: dangerous to work with because of the mephitic vapours arising from it, taking years to produce, rarer of occurrence than the black, and from an older period. A good colour is Chinese cinnabar: there is only red glass at all comparable to it.

Ruby-coloured glass, amalgamated with pure gold, is unhappily a glory of bygone days. It is not made nowadays, although Kumkel has recently discovered the secret of it. In red glass more than in anything else, the fine quality of yore is unobtainable: you can tell the restored panes in Gothic windows by their cruder and washed-out quality.

The first porcelain, it is notorious, was red. It is that called from its inventor, 'Böttcher porcelain.' It had the colour of a reddish-brown sealing-wax, and was often cut and polished, as it was as hard as stone. Later, white porcelain was adorned with red, especially at Meissen, where a red particular to porcelain, the so-called iron red, is used: a breakfast service of Count Brühl, decorated altogether in this colour, is preserved at Dresden (Grünes Gewölbe). But the chief users of red were, after all, the Chinese, who not only decorated porcelain with all shades of it, but produced porcelain itself like a lustrous pink shell: so delicate that one expects to see the blood pulsing through its transparent and membrane-like substance. Does not pink skin in a human being result from the stretching of a delicately lustrous transparency over a glaring

red underground, which only comes into its own at times, as in the lips, which give a kind of edge or section? Use the same principle over the toilette; lay a transparent grey or black stuff over a red ground, and very choice effects can be obtained. At some points let pure red appear, just as a fine line, very possibly; and a grey fur or a silver tress will go very well with it. To wear red silk alone is hazardous for most complexions. Yet toned down slightly, it suits almost everyone. The brighter the grey the greater its toning value. Such masters of colour effect as Velasquez and Terborch, as already remarked in another place, produce their coral-reds with grey.

Of red silks there is a wide range of selection, though many tones have crudeness about them. The cooler tones are the better. There has been no revival of the earlier delight in velvet. We only like red velvet garments in picture: they have nowadays a tang of the theatre about them. It was actually thought for a long time that classical pieces could only be played in velvet—until the staging of Max Reinhardt proved that red velvet could be dispensed with.

About red with wool stuffs we must say something, or we shall be missing a great charm of the colour, which is exceedingly telling with woollens. We have here to do with that sense of seeing into or through the material that was remarked in connexion with red lacquer. It is only with bright red material, however; the crimson is in too fast a dye and wanting in transparency. Loosely textured woollens and wool-muslins have something 'merry and bright' about them, while the thicker stuffs, particularly the stuff used for soldiers' tunics, have something hearty and vigorous. An enhanced joy of living is vocal both in red sporting coats and in red uniforms—the two indulgences in the feeling that we Northerners have of late centuries permitted ourselves, though Southern peoples have not been so self-repressive. The peasantry, to be sure, are not open to the same censure. The German Schwälmer in particular have a good eye for red's decorative possibilities; their maidens, when they dance, wear dark-blue skirts with a red inner lining, having often as many as fourteen of these garments above one another: the skirts, when they whirl, display all these fourteen red linings

and gyrate up and down in manifold layers round their wearers, making them so many giant poppies with the wind caressing their petals. The effect is that of unreined joy of life in the dancers, who subside then into demure dark-blue-garmented modesty when the orgy is concluded. In other countries peasant art makes use of red, though its employment is somewhat cruder; the Bulgarians and other Balkan races, for example, get fine full colour harmonies. The marvel here is how finely the red is matched with yellow and, still more wonderful, with green: for a mosaic effect with green and red is one of the most difficult things to manage. In this the Oriental peoples are better. They can bring any colour into combination with red without its being in the least loud and shrieking. Their skill depends a good deal upon the good pigment with which their red dyeing is accomplished. Semper says that we may try as we will, with all our science and determination, but we cannot get certain colours the women of India, China, and Kurdistan get with the simplest possible means and with an absolute ignorance of chemistry, the depth, splendour, and naturalness of which fill us

with rapture and perplexity. The reason is that the tones in question are really nature-tones which do not fit in in the least with our abstract chromatic scale, and in the production of which the raw material to which the colour is applied is just as important as the colour. Says Semper again : ' We should have to hang our newly-dyed cloths in the air for a time, till they were bleached somewhat, to produce anything similar.' Faded reds give magnificent tones. A green and red Scotch plaid is beautiful after it has been exposed for a time to the air. A painter representing red tiles amid greenery will have to add a reconciliatory air tone, if his picture is to be pleasing.

In peasants' houses we feel pure red next to green to be in perfect order and keeping ; and in a wanton humour or merry carnival mood we ourselves enjoy dancing beneath green wreaths carrying gleaming red lampions. Yet this is masquerade more than anything. For everyday purposes it would be too loud. We find a bright red garden-paling in front of green hedges the mark of the parvenu. For constant use we like quieter colours. We are a bit afraid of bright red.

It must be held in reserve for festival occasions. Yet if we were better acquainted with its intimate charms, we might easily brighten even our every-day life with the help of its radiance.

BLUE, AS COLOUR AND SHADOW

OUR discourse on blue is best prefixed with a sentence from Goethe's 'Colour Theory.' He says 'Just as yellow is always accompanied with light, so blue always brings a principle of darkness with it. This colour produces a strange and almost indescribable effect upon the eye. It is an energy, but one negative in character; and in its highest purity is as it were a stimulating negation. It produces on the beholder a contradictory feeling of excitement and repose.'

The dictum contains practically the whole of what is to be said about blue. Anything more that is written is either amplification or application. When we stated in the introduction that blue is the cold pole of the colour scale we only paraphrased Goethe when he says that it is negative in character, i.e. a stage on the way to the nothingness of black. Blue is the dark element in all other colours:

it is a talisman for bright and dark, for cold and warm : a colour is cold in proportion to the amount it contains of blue. Pure blue is the coldest colour. It is comparatively rare as a (technical) colour for working with. On every colour scale one can see how few tones are perfectly blue. They soon diverge into greenish or violet—though it is different in actual Nature, where we have an infinite range of shades of blue. They are everywhere where light does not penetrate. The intenser a shadow, the bluer. Goethe describes this apparent colour very penetratingly, speaking first of the blue of the sky : ' It arises from the shining of black, colourless, infinite space through the murky medium of our atmosphere, so that a blueness appears to us that is brighter or paler on the one hand, as the turbidity of the medium is increased, on the other hand darker and richer, the closer the medium approaches transparency.' It is the explanation of blue eyes. The pigmentless transparent iris roofs over the dark hollow of the pupil, at the bottom of which lies the black retina, whose black viewed through the turbid medium of the cornea appears blue. In technology the same process is employed when by the glazing

of black with a thin white layer the black is made to appear blue, and indeed the more brightly blue, the thicker the glaze of white, and the more darkly blue, the more transparent the layer. The most primitive Greek painters are said to have got their blue in this manner, having no material blue to work with, as we can see from the absence of any word for it in Homer.

The same part as the atmosphere plays in originating the blue of the sky is played by it in producing the apparent blues of the earth. The intervening air tinges a distant dark object, be it mountain or valley, with blue. We are quite in the habit of gauging the distance of an object by the intensity of the blue in which it appears to us. The farther the thing, the bluer. The farther a shadow, even, the bluer. Near shadows are usually coloured violet by warm reflections : but blue appears, wherever light is absent. It is the landscape painter's most important colour. It stands at the head of his palette and comes in for the greatest use. Our eye asks for it everywhere, and a picture without it is inconceivable. It makes liaison among the other colours. It seeks now the light airy background, and now

the dark shade. It rests at one time as cold light on skin that shimmers like pearl, and at another time it forms contrast to red and yellow tones. Yellow that has light in it always calls forth blue as its relief. The twilight sky beheld in contrast to yellow lamp-light appears dark blue. The blueness of the twilight hour has inspired many a painter, as it has Klinger, for instance, in his 'Blue Hour' (Leipzig, Städt. Museum). People often say of such subjects that they are unnatural, that there is no such blue, till coloured photography from nature teaches us different. A painter will never dare to lay on so much blue as can appear in a colour photograph of distant mountains.

In the relation of the colour to the other colours the following considerations are of importance. Blue is so deficient in light, or as one says technically, has so low a tone-value, in comparison with red or yellow, that a large quantity of it is required to maintain its balance to these other tints. Any colour-table will confirm the weakness in light. How much easier it is to distinguish red and green at any distance! (General Survey, p. 21.) We can stand it in great quantities, because it acts on the eye beneficially. It is in very deed the

stimulating negation Goethe speaks of. Green and violet on the other hand are fairly equal to blue in comparison, and we can easily pick out those tones balancing its lighter or darker shades. There is, however, so much shifting of correspondences that a darkish green answers to a rather intense blue in value. When now a work of art is composed with blue as its basal colour, the other tones must be more or less blends of blue, brown, grey, or greenish ones possibly. A certain greeny-gold bronze is often fitted to go with it. Generally speaking the colours on the cold side of the colour disc are adapted for harmonious combination with blue. Should the contrast colours, viz., yellow, orange, or red be used in the picture, the proportion of blue must be very greatly superior, if blue is to retain its effect as a colour in the composition. Silver and gold assist the luminous effect of the colour.

To examine first how the art of painting deals with it—the blue on remains from antiquity is worse preserved than are the other colours owing to the great tendency blue has to fade. The background for the reliefs on Greek temples was usually blue and the triglyphs were always in that colour. On

Egyptian temples also the adornment was often of blue starred with gold or yellow. How very much blue was employed we can gauge from the lovely fragments in blue glazing, from the many vitreous pastes, and from the popularity of lapis-lazuli. Survivals of blue colour are found too on Tanagrian terra-cottas. As for its use in painting proper, our means of knowledge are limited. A bright airy blue, bordering closely on green, appears frequently in the pictures from Herculaneum. We have certain samples too in the frescoes in the House of Livia, on the Palatine in Rome, in a delightful dining-hall decoration, consisting of green-blue vine tendrils on an airy bluish-yellow sky. We find a very great deal of blue, of a greenish quality likewise, in the mosaics of Byzantine art ; at times even a dark cobalt, with threads of gold running through it, by which its gleaming quality is enhanced, intended to represent a sky against which the figures stand out. We find the same in Moorish art, with a profusion of motives in blue mosaic, blue tiling, and blue paving, for the most part blue and white or blue and green, but with an occasional admixture of yellow. On a ceiling in the Alhambra (see Racinet : " Polychrome

Ornament," German edition, G. R. Reinhardt. Plate xxvii: Arabic. Stuttgart), there is, e.g. a strong blue of a rather high luminosity, which yet, when regarded closely, takes and is meant to take its place behind the arabesques so as to look like blue sky, seen through the interstices of these dainty windings. On some of the spaces fine white points actually suggest the starry heavens.

On most fresco paintings some blue or other appears, very often without our being distinctly aware of it. The blue distances and blue skies, at least in the pictures of the Renaissance, play merely the part of a background. The light blue Florentine sky of Lorenzo di Credi makes a strong impression, however, and has decided part in the composition. A characteristic joy in colour leads Filippo Lippi to paint the Madonna with a light blue mantle ('Adoration,' Kaiser Friedrich Museum, Berlin), before a background of forest. It is quite a remarkable and enchanting picture, as if a bit of blue sky had fallen down into the dark forest. It is hard to say, whether this light figure is on her knees, or hovering before the trees, or whether she will not suddenly vanish behind them. It is blue again in its enigmatic quality, the

teasingness that Goethe hints at, through which it is impossible to say if it is near or far away. Raphael's and Perugino's blue is far earthier: the blue they and their followers affect is the dark shadow-like frame for the vivid red of costume and for light flesh tone. Bright blue, especially with its greenish shades, as in the portraits of Dürer (see that of Hieronymus Holzschuher in the Kaiser Friedrich Museum in Berlin)or as Holbein's use of blue as undertone to his portraits shows, has a special and immediate relation to flesh colour.

It is a relation that Tiepolo has turned to account in a way preponderatingly decorative. A whole row of his works, many in South German Churches, are for this reason so prepossessing. In some of them dark highly-coloured figures stand out from a bright blue sky, in others a deep blue stands close to a light yellow, with a delightful flesh colour devised to go with them. What eye for blue effects is shown by the harmonious picture 'The Surrender of Breda' (Prado, Madrid). Velasquez tunes the whole to the keynote of blue by a greenish bronze colour. A blue consorts always with a yellow-green bronze tone, whether in the tunics of the two Swedish

generals who have just dismounted, or in the groups of soldiers, or in the hilly landscape, or in the cloudy heavens, the contrast weakening always in proportion to the distance. There are depths in the picture also, which determine the blue-green ground tone. Specially subtle is the use of the lances of the imperial cavalry in this connexion. This painter uses every known device in the art of obtaining effect by colour.

Also such a master of colour as Rubens had a blue upon his palette. It has been already mentioned that he uses it in contrast to his bright flesh-tones; he now and then puts a fluttering robe of blue next to bright yellow hair. In his 'Mourning of Christ' (Munich, Alte Pinakothek) the blue-robed Magdalene with her yellow hair is seen drying the feet of the Saviour.

The painters of the Rococo took keen pleasure in blue motives. They had a penchant for bright gleaming blue in its different effects upon flesh-tones. So Watteau, Fragonard, and Greuze, of which last there is a portrait of a young girl in the Old Gallery in Munich. The English Painters continued the penchant and we have some wonderful portraits in blue

from their hands. In 'The Blue Boy,' by Gainsborough, the dark, leafy background makes the suit of blue silk quite the chief thing in the picture. It has been on view before now at an Academy exhibition in Berlin, at which same there was also the fine portrait of Lady W—— by Lawrence: she is in a light blue dress with grey muff before a silvery and cloud-covered landscape. Masterly is 'The Blue Lady' of Goya (Kaiser Friedrich Museum, Berlin). He has taken the black note of the lace as a reinforcement to the blue dress of the old lady and used the waxy pale face and the hands as elements of contrast.

In landscape we have, as first impressionist, Turner with his blue clouds, from which only a slight touch of any other colour peeps forth. Of modern Germans I first name Böcklin, whose intense blue seas and distances are universally known. One who composes strongly in blue is Hans von Marées. He puts it in gleaming passages between great depths of colour (a cold blue e.g. next to a black-green wood) and this contrast of light and dark helps the blue and makes it very emphatic. His 'Reposing Diana' (Munich, Staats-galerie), is composed in this way. Surrounded by her red and

brown-clad train, she is seated on her outspread mantle of blue in the midst of a dark green wood, through whose branches ruddy twilight shimmers.

Through the influence of Cézanne, with his blue depths, and of Gauguin, with his blue contrasts, appears in painting a new employment of blue. These artists are simply unthinkable without it. Blue with Cézanne is both keynote and means of representation. Blue is a space of colour made effective by contrast with Gauguin. Cézanne, as examination of his works will show, fetches everything out of blue depths. The shadows are blue, the swimming air, and even the contours have remained blue. His pupils have most of them retained blue as contour and as connecting medium between the other colours. Others, under the influence of Gauguin, essay to give the blue-coloured space a heightened significance by the opposition of its complementaries, yellow and orange. If then everything else is kept luminous, a staggering and often in addition a delightful effect can be secured. Solemn and great is the blue in the hands of Hodler. In the picture entitled 'The Hour of Worship' (Heilige Stunde), the effect of blue is heightened

to the point of symbolism, by means of sixfold repetition. Blue raises the six figures clad in it more close to Heaven over the more terrestrial tones that compete with it.

It would lead too far astray to enumerate the differing ways in which modern painters use blue. There are endless views upon it. Some put separate spots of it between the other colours, as Nature at times sets the reflection of intensely blue water over against surrounding landscape. Others place it only on the juncture of light and shadow, using it thus as half-tone and approximating in so doing to the colour theory of Goethe, who finds on bordering lines everywhere the contrast between yellow and blue media. The cubists go still further when they reinforce the contour of every cube or cylindrical section into which they resolve their painting-subject by the collision of blue shadow with yellow light, and model it so to speak by itself and apart from other sections.

It is easy then to appreciate how very prominent a place blue holds in the thoughts of the painter. It is not quite so prominent in the case of art industry, at any rate so far as pure blue is concerned. Applied to textiles the colour is not very permanent: blue

furnishings from older times are washed-out in appearance. Present day blue materials are, however, very charming when seen in use. They illustrate how helpfully blue mediates between other colours, quite as in pictures. Yet in spite of this attractiveness, remarkably little blue upholstering is asked for : hard grey blues, cold, dull, and unresonant, matching with nothing else—in short, not to be compared with pure blue—are to-day too much the fashion. A blue of any depth would mediate beautifully between the different coloured curtains, walls, carpets, and afford a far greater liberty of choice than at present, since pretty nearly any other colour would go with it either as match, or as contrast. For wooden enclosures, red, yellow, brown, gold—anything almost with the exception of grey—could be employed in a carpet, the deeper the tone the better. A black edge or a fine black design is very effective. Blue resembles green in being advantageously fastened down, as it were, by black : has, however, a more solemn, more stately effect than is the case with the other colour. The black wooden enclosures, too, can easily give too sober or dark an effect when round blue. Blue wall-papers and hangings are most

pleasurable. Blue is at its very best when suspended ; for the play of light on it is then not excessive. Blue table-cloths catch too much light ; and in light most blues show colourless : the downhanging edge of a blue table-cloth has the most colour. It is a pleasure to watch a blue curtain and compare the strong differences in colour between the insides and the outsides of its folds.

The good effect of hanging on blue colour makes it an excellent colour for clothes. Apart from dark blue, which has become a kind of uniform suitable for wear on every possible occasion, an intense strong blue is good in almost every material—in velvet, in silk, in wool, or in the coarsest or finest linens. The blue-clad washerwoman at the brook is as nice to the eye as her well-to-do sister in blue cornflower-coloured satin. Strangely enough, in joy in the colour we can almost become unconscious of the wearer. That blue is good wear, can not be said without all reservation. Certain shades of blue match with certain complexions : blues touched with green or a very intense cold blue with no red in it go best with a delicate skin and blond hair ; warmish blues with high colour and dark hair. As

already stated, blue is helped by silver and gold, and also by brown. We work blue pearl-pockets on gold thread because the blue benefits by the gold glint: and thin silver-plates (or fillets) which look deep blue when light falls through them, have the same effect; while quite thin gold fillets look a lovely greenish blue. A pleasing association of brown and blue can be seen in Lithuania on old fishermens' cottages, which, made of old well-seasoned and therefore dark brown oak beams themselves, have gleaming blue-painted window-shutters and ornamentations, which look specially pleasing in their rather severe environment. In the interiors too there are big blue forms, and blue tables and cupboards. As the walls are whitewashed, the floors of natural wood well-scoured; as the table will have artificial blooms in yellow as an adornment, and the fisher's wife, besides white sleeves, will have a bright green or strong violet for her tight-fitting bodice, the total effect will be an attractive one and a regular *bonne bouche* for the painter. The most appropriate material for blue is glass, because the light effect here will help the colour, and the eye can steep itself in the ever-veering

impressions, now of nearness, now of remoteness, of the colour. They made cut glass in the days of the Empire sometimes all blue, sometimes all white, save for a narrow overlapping of blue at the drinking edge.

Quite a number of such drinking sets still exist that belonged once to the house of Napoleon.

In porcelain white with blue is the familiar colour. Men have for long been brought up on the Meissen onion-pattern. Its too familiar thin waving blue lines one is fairly sick of. That older Meissen pattern with much blue, with some red spots, and with gilding, is much finer.

In pottery blue is one of the chief colours. Blue of a very emphatic character is found on Italian majolicas. The beginnings of its use date back to the Early Renaissance. Who does not know Lucca della Robbia's majolica reliefs on a blue ground? The simplicity of the composition, the fineness of the design, and the repose that lies in the juxtaposition of blue and white, arouse for them our affectionate enthusiasm. In the Middle Ages and in the Renaissance blue was absolutely the favourite colour for the adornment of stone-ware and of

every kind of pottery. This was due, not only to the association of the colour with religion, but also to the fact that blue glazing, from the cobalt used in it, was the best of all colours for fixing. A delicate grey-white, or grey in combination with blue, occurs too on the famous Viennese and Thuringian stone-ware in both its earlier and its more modern specimens. Very expensive and of a perfectly magical blue is the Ruskin stone-ware made in England; it competes in excellence of colour with the delightful enamels or the cloissonné which we admire in old Romanesque church treasures. The cloissonné, or enamel in compartments, was made on the prepared copper plate with pounded lapis-lazuli, which of itself was reckoned by the ancients as all but a precious stone. Very effective, especially in personal embellishments, is turquoise with its strong greenish blue. The blue-eyed belle of old wore ear-rings of turquoise to give her eyes, which without them inclined to look grey, a finer and brighter blue colour. Apart from turquoise, Nature is badly provided with blue jewels. She has sapphire and aquamarine, both inclining to the extreme of lightness. Their colour-effect is not very intense; indeed

almost watery, at any rate when compared with the splendour which organized Nature unfolds in blue. All the shimmering blue butterflies, beetles, and dragon-flies, the blue plumage of the bird creation, blue peacock's eyes, blue humming-birds, blue spottings on the titmouse, all the seductive blues on flowers, which entrance us and linger in the memory, are beauties of Nature which are past our power to imitate.

All this blue fills us with wonder, as does the blueness of shadow and that of the water of the sea. What allays our fever and stills our longings more than the sight of the blueness of the sea? It calms and intrigues us at one and the same instant. In its presence we appreciate that contrast of moods of which Wundt speaks, the contrast of sprightliness and repose, which finds one pole of expression in yellow and the other in blue. The colour is at once near to us and far. It is as it were Goethe's 'stimulating negation,' in its very highest potency. Is there any wonder that it is the chief colour in the fairy tale, or that the 'blue flower' is the symbol of Romance (Novalis, Heinrich von Ofterdingen)? The wonderful has its home, now in the far away

blue distance, now in the blueness of the twilight. Even the notorious 'Blue Monday' has affinity with this mystery. 'Bluing time' is 'doing nothing' because of this connexion of blue with nullity. It would be interesting to know if the German 'blue vapour' for 'humbug' has any counterpart in English idiom? 'Blue devils,' at any rate, has got something to do with illusion. The enigmatic, the unclear, is the blue. Popular instinct expresses the essence of a thing unconsciously. Our feelings about blue attain to conscious expression, however, when Goethe diagnoses the essence of the colour as a delightful, or intriguing, or engaging, or stimulating (for we can use all of these adjectives in translation) nihility or negation.

YELLOW, AS COLOUR AND LIGHT

YELLOW is the brightest colour: it is that of sunlight. The brighter the day the more yellow there is in the air. Says Goethe in his 'Theory of Colour' (Farbenlehre): 'Light of the greatest energy, such as that of the sun, or that of phosphor, when it burns merrily, is gleaming and colourless; but seen through a slightly-clouded atmosphere, it is yellow. And light modified and dimmed by such a medium, casts on objects a yellow, a yellowish-red, or a purple gleam.'

The clouded medium, as before in the chapter on blue, is the atmosphere. But whereas before, the medium made the blackness of space seem blue, it makes white sunlight seem yellow. If the air is clear we have a fine yellow transparent colour diffused over all coloured objects. It will be observed that the nearer the deep blue of the sky approaches to the sun, the yellower is its tingeing, until,

when it arrives at the radiant centre, the beams are too bright for the eye to support. Should a thin layer of cloud cover the sky, this layer is yellow, and most intensely so at the spot in it which hides the sun; and it is then that we can appreciate best what a yellow film is spread over the landscape: in a cloudless sky the bright yellow light of the sun has dark blue shadow at its side and so calls forth the double impression of blue and yellow, but when the sky is overclouded that blue shadow is done away with and the impression of yellow is dominant. The layer must, however, be a thin one: the sun must be just dimmed only for there to be this effect. If the layer of cloud or mist is thicker, we have ruddy light: and when the sun shines between the clouds, so that little blue is apparent, the light is undoubtedly yellow.

Yellow is thus associated in our minds with the conceptions of light and of the sun. It was so even in olden times. How many yellow or golden symbols flaunted it on the old temples of Egypt and Persia! The clothing of sun worshippers was yellow. Yellow is still the colour of Buddha and of his priests and turns up everywhere in China. Yea, in

China it was a sacred colour, the colour of the emperor and of everything associated with him: a colour forbidden to the populace. It was the colour of Baldur, the Sun—and Spring-god of the ancient Germans. It is still connected peculiarly with the Spring. The firstlings of the Spring are almost all yellow, both the flowerets of the mead and the catkins of the new foliage. It is a bright gleaming yellow from which we have the impressions of light and of warmth: those of light from the bright yellow, those of warmth from the orange-yellow.

Red inclining to orange-yellow and green inclining to citron-yellow are two colours of entirely different properties. Whereas to our vision bright yellow stands up from the ground and seems to rise into the air, dark yellow has always something ponderous and earth-seeking about it. In pictures a yellow sky is at once credible as one distantly removed, while yellow in the foreground must have reddish or orange shades to be any way credible. A painter may quite well paint a yellow sky with pure citron yellow: he can only paint a road or a robe in the foreground with an admixture of reddish or brownish; should he

take bright yellow he would achieve an effect of light and not of colour, since bright yellow does not lie with other colours on a surface but hovers above them. It rises out of a ribbon-shaped colour-spectrum like a wave. Bezold remarks: 'Yellow reveals its characteristic colour-note in bright light, violet in very subdued light, and all other colours when the lighting is moderate.' Orange on the other hand lies close up to red and appears firm and near. With it it is easy to determine what quantity is required for good results in a colour composition: this is much harder with bright yellow. For although a bright yellow spot in a picture means always a source of light, it can easily happen that heavy reds or strong blues or greens in its vicinity lie so far away from it in value, that we feel it as a hole in the surface through which the sun is shining. The fact is turned to account by Correggio. He paints his ceiling-pieces in such wise that we feel a heaven gleaming behind dark human forms. He managed his yellow so as to achieve *tours-de-force* in his surfaces and to emphasize the architectonic structure of his cupolas. And by the use of yellow as a container of colour i.e. by the setting up of its complementary

colour in juxtaposition to it—similar effects can be achieved to those Correggio wins from it as a container of light.

As for its harmonious colour-effects, the juxtaposition, that is, of yellow with its contiguous colours of red and of green respectively, a specially charming range of blends is possible, although pure red with pure yellow is a somewhat risky combination. Recall the already mentioned 'Pestilence' of Erler. Orange, however, does not go badly with red when the proportions are rightly adjusted; though greenish-yellow is impossible (see 'Bad Contrasts' in Brücke's 'Harmonious Colour Combinations') Greenish yellow goes better with green, with bluish green especially. Pure yellow can be unpleasant with green: and so can orange, if it is immediately contiguous: better effects come from blendings and from gradual transitions.

The colour-effectiveness of gold comes in at this juncture. There is a dull bright yellow and a dark red yellow to be had in the form of gold. Gold has the same colour-properties as yellow, though these are enhanced in their effect by the peculiar qualities of the metal. In pictorial art it plays almost a greater part

as colour than does yellow. That property of yellow that it is an advantageous background for all other colours is to be studied first of all, chronologically, in the gold background of old pictures and mosaics. There is nothing earlier: classic art shows no colour effects depending specially on yellow or on gold—apart, that is, from gold letters of the alphabet on a background of colour, and for a bright yellow, blue-green, and pink, all together on a background of brown, in a painted border among the grave-finds at Antinoë. Yellow has no say in the wall-paintings of antiquity.

The gold ground is the special charm in the mosaics of Byzantium. We can observe its imposing effect in St. Mark's at Venice, or in the basilicas of Ravenna, and also as it has been taken over into fresco by the early mediæval painters. The colours stand out from it with remarkable distinction. The Siennese showed great virtuosity in it, but likewise the old masters of Cologne. Noted is the 'Madonna with the Bean-blossom,' or the 'Madonna in the Rose-garden,' by Stephen Lochner (Alte Pinakothek, Munich). What these old masters have accomplished with

loving absorption in this style is technically and chromatically among the best painting extant. Mention should be made here of a very old altar-piece on wood panelling, catalogued under the 'School of Avignon,' which represents the Lamentation for Christ (Louvre, Paris). The life-sized, sensitively drawn figures in low tones are in relief against a sky covered entirely with gold. Both colour harmony and composition are most striking. In the Renaissance yellow is not plentiful; it was no longer the custom to paint on gold.

To heralds yellow was not a colour. The Moors never employ it for washes, but only for line ornament, for projecting margins, for rails, etc., in short, for its light value.

A picture by Botticelli, a 'Procession of the Three Kings' (Palazzo Pitti, Florence), deserves mention. The Medici family are given in it, and the painter himself in a luminous yellow mantle, which at once attracts attention for its colour. Equally striking is the yellow brocaded coat in which Henry VIII is painted by Holbein. The colour says audibly, 'Behold the mighty potentate!' Again in the lovely portrait of the Duchess of

Urbino, by Mantegna (Tribuna, Florence) the robe of dark brown velvet, slashed with both brighter and darker yellow, constitutes a brown and gold harmony in contrast to the blue-green of the atmosphere. Brown, red, and bronze-coloured clothes, lit up locally to sheens of yellow, occur in the pictures of Velasquez. Titan also patronizes the colour. Well known is a portrait of his own daughter in yellow-gold, holding aloft a gold-coloured fruit-basket (Kaiser Fr. Museum, Berlin). The purest yellow imaginable was one of the wonder-working tints of the elder Lucas Cranach, Germany's greatest colourist, who by reason of indifferent pupils has been so long in coming into his own. He was Frederick of Saxony's court painter, and his ripest work in the Orangery at Dresden is a revelation in fine colour. Matthias Grünewald made use of the same pure yellow. In his 'Mocking of Christ' (Alte Pinakothek, Munich) a horse soldier with yellow jerkin gives the key-note to the whole colour of the picture.

Tiepolo produces very light-toned effects with yellow. On an altar-piece at Strassburg Minster, an 'Ascension of the Virgin,' he

combines in the gleaming bright light yellow heaven a series of light colours—light blue, light red, and a subdued yellow that harmonizes very beautifully with white and with flesh colour. And equally fine is the effectiveness of flesh tone and yellow robe together in the 'St. Catherine of Sienna' of the same master. And that these tones are so consonant is exploited by Rubens also. He likes giving his brilliant-complexioned women light yellow hair or yellow dresses, aiming with the shimmer in his colour not at colour effect alone, but at those effects of light of which Rembrandt was prime master. When these are recalled, Rembrandt is aptly dubbed the master par excellence of yellow. Without yellow he is inconceivable. Yellow took the centre of his palette like a great shining sun, to which the other tones formed shadows. His colour inspirations were all related and attuned to yellow. Not a picture but was probably made up in that way. Everywhere the golden-yellow tone is visible, merging here into brown, disolving there into red, solidifying here into orange, fading there into grey. He can hardly be said to compose with it—you cannot find a shaped spot of it any-

where. Rather does it rest over the whole like a luminous golden atmosphere. Unique in his time, he found no successor for centuries.

Apart from the portrait of Mme. Recamier by David (Louvre, Paris) with its shimmering yellow background, yellow motives are rare in the art of the Rococo and Empire periods. Turner, the pioneer impressionist, was the first to appreciate the yellow glories of the mist on the waters of the Thames. Of modern painters Segantini frequently employed yellow for his peculiarly bright natural lighting. He floods his pictures with yellow, but in doing so he has no further thoughts like Rembrandt: he simply paints the sunlight of the high Alps with his eye directly upon them. Slevogt's special feeling for yellow shows pre-eminently in his portrait of the Bürgermeister of Hamburg (Kunsthalle, Hamburg). His Herr Monkeberg stands out in impressive black from the festival yellow pomp of the pillared council chamber. The recommendations of a yellow background are often recognized by Erler in his portraits: his flesh-tones look very effective against it,

as do those of the masters Tiepolo and Rubens. These, however, use purer yellow : their yellow lacquer is no longer obtainable, as those who try to copy these masters successfully are aware of to their cost.

A painter who reacts to yellow in all shades and strengths, was Vincent van Gogh. He is inconceivable without the tint, employing it not only as colour element, but with optical science as well, to enhance the sunniness of his atmosphere : he sets yellow strokes between the lines of his blues in the fashion of those English Pointillists, and their greater French successors, who were inspired by the American physicist, Rood. By using yellow on this principle, Signac and Cross produce their sunny sea-scapes or their gardens drenched with sunlight. Le Sidanier, in his turn, has exploited it for the representation of dim lamplight. He conveys with his yellow in its separate strokes the diffused light of a solitary lamp in some quiet courtyard in the gloaming. The lamp's presence, save for a yellower patch of reflected light on a yellow chair back, or on a deserted half-cleared table cloth, would hardly be detected. Orange curtains in a window

lighted from within afford a companion light source in the background and from the point of view of construction a useful counterpoise. The prematurely-deceased German painter, Charles J. Palmié, with his nocturne of the Marienplatz and with his sun-bathed forest scenes, was also a gifted employer of Pointillist technique.

If in painting the property of yellow as light plays a greater part than its property as colour, in industrial art the reverse holds good: yellow's suitability for backgrounds renders it so useful in the latter. In yellow decorative materials there has always been much beauty. Two lovers of pomp and display have made it a background for their persons: Louis XIV with his Baroque, and Napoleon with his Empire style of furnishing. The bright splendour of yellow has something spectacular about it intrinsically, especially when it is offered to our eyes in imposing-looking silks or brocades, such as filled the great saloons of Versailles or of Fontainebleau. It was used as upholstery between the rich gilded wood architecture of fine furniture: it was used too for stretching over the walls in gilt or white wood-framed

compartments. In the daintier Rococo time the brighter greenish-yellows were preferred with lighter-toned gilding. With the Empire yellow came into vogue again with a renewal of its splendour. Certain shades of yellow are nowadays almost a synonym for the period: and 'yellow' used of furniture conjures visions up of Napoleon at Fontainebleau or in the Grand Trianon. In Germany we see the colour in many old castles—Sanssouci, Nymphenburg, Meiningen, Weimar. In Empire times merchant princes had yellow salons in their houses. After this period, however, for many years, yellow was a proscribed colour—as already once before in the Middle Ages—when it became the colour of jealousy or of the devil; driven out by Christian blue from the high station it had occupied as religious colour with pre-Christian western peoples. It has cropped up, however, of late as the first colour with which the new decorative moment of the nineteenth century has busied itself. Yellow wall-panels are specially beloved. Modern decoration offers much that is charming in articles of furniture: e.g. the large yellow wooden suites upholstered in

corded velvet produced by Bruno Paul, or the fine-patterned stuffs by Schulze-Naumburg, that recall the Bieder-meier period. There was an excess of indulgence in yellow for a time. Wherever one looked there were yellow curtains, yellow bedspreads, yellow straw-mats, and yellow what-not? But we have found that yellow is not good in every material and that there are many crude shades of it. Fine shades in silk and velvet are many: but in wool and cotton, and in knitting wools in particular, there are scarcely any tones of yellow that are tolerable. Those dyed in saffron in Balkan States are exceptions. Linen as a rule takes yellow better: quite coarse linen stuffs present good shades in it. Yellow is hardly ever used for carpets: what goes by the name is really light brown. The same is true of yellow as of green: it will not keep down: bright yellow not securely, orange yellow not at all. A well-known decoration expert had an interesting proof of it as she was dressing a show window. A number of white-laid round tables were meant to stand on an orange-coloured floor carpet, but the

orange rose up so between the legs of the tables that it was impossible to tell that the tables were not hovering in the air. Only by round black mats beneath them were they anchored, as it were, to the floor. Yet yellow and black together have usually something of stiffness and severity. True, there are ceremonial brocades in black and yellow together which lend a drawing-room an unapproachable sense of splendour: and the framing-in of stuffs with black wood has a like splendour-giving effect. Still brown or yellow or gold-coloured woods are the happiest for this purpose.

That gold is at all times good framing has been indicated already. Any picture can be framed, without more said or done, in gold; and in yellow and orange also; a yellow frame sets off a bright embroidery successfully. And however much yellow may be tabboo between the other colours, it contributes invaluably to their effectiveness when used as a frame around them.

Yellow goes especially with the blonde complexion. It makes fair hair seem fairer; and a yellow ribbon round the neck has some special affinity to the flesh of the fair-

complexioned. It makes it almost seem as if a ray of sunshine were illumining it. The widespread notion that yellow is only for brunettes must here be contradicted. Pure yellow and greenish yellow, indeed, have less of this affinity to dark hair and complexion than they have to the light varieties. Orange, it is true, is too powerful for human fairness: it needs something strong and dark to balance it.

Amber, whose advantages for adornment have been recognized for ages, was loved by the Greeks and has come into fashion again quite recently: the blondines affect the lighter and the brunettes the darker shades of it. Topaz is more expensive: it is likewise to be had in light and dark varieties. It used to be mounted almost always in gold, but now both it and amber are mounted in silver, and in this setting make a lovely impression. Yellow with silver and yellow or gold with white, are extraordinarily good matches. In many small castles from the days of the Rococo there are wall-panels of yellow with silver embellishments. There are such in the Amalienburg in the Park at Nymphenburg,

and likewise at Sanssouci. From the Rococo period come also the white walls with gold ornamentation in endless variety, which have been imitated so much that they have become utterly debased and are enjoying at the present moment a needed rest cure from public appreciation. A thing which in white and yellow (or, it may be, gold) still has great popularity is porcelain: pure white porcelain with gold is always attractive if the gold is tactfully applied. All-yellow porcelain is however no longer made or appears but very rarely in the market. The taste for it has a history. We have porcelains from Louis XIV's reign in strong yellow. A somewhat later manufacture shows a weakening of the yellow and the Louis XVI ware shows still a dull greenish yellow. The Empire period returned to strong yellow, but with almost too heavy gilding. Then yellow porcelain went right out of favour and was not to be had for the asking—though it can now be bought occasionally.

There used to be a fine yellow glazing for Dutch tiles and for stone ware. Yellow stoves of astounding beauty are to be seen

in old country-houses. Unhappily the formula for the glaze is lost and potters have their work cut out to try and equal the old products. There are also quite plain earthenware pots of whitish clay which are covered with a glaze of a bright yellow colour. A row of such jars in a whitewashed kitchen is a very pleasing sight. In Dresden and in Vienna many good things, mostly in the form of human figures, are made in finer porcelain-like yellow material. The only yellow glass-ware that is any good is of oldish, mostly Bohemian, production. The yellow replaces in old stained-glass windows call attention to themselves by their hardness and crudity. The colouring of glass is one of the lost arts of Christendom.

It is safe to assert that in decoration with gold and yellow we cannot hold the candle to our ancestors: save, perchance, in the department of book-binding. One meets occasionally with a handsome gilt-edged book or a fine modern yellow leather binding. But who can imitate parchment stained by age and time with yellow, or one of those pieces of creamy old ivory which, chased

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with gold, present so beautiful an appearance? Most old things weathered by the air have a distinctive charm which no hand-process can produce.

Think of old white-painted houses, which with the passage of time have acquired a peculiar bright yellow, a yellow derived from air, which no decorator's chalk-wash can equal. The artificial colouring matter is simply something different from the flavous coating with which the air gradually invests anything which boasts a white surface. It is a thing to note how in the long run in Nature's handicaps yellow carries its colours past all others to victory. What does age not turn yellow? Our human skin, our bones, old wood, white paper, and green leaves, all submit to its influence. Nature devises us a mournful treat in the autumn yellows of the woods: no strident yellow, no sheeny light-filled yellow of the spring, but a mild adieu-giving yellow, dissolving into violet atmospheric tones, or an orange ruddy yellow before a background of greenish sky. Of its leafage we gladly take a spray home with us and feel pleasure in its possession throughout the winter.

Only the arrival of spring with its first brilliant yellow flowerets makes us notice that the yellow that so appealed to us is now grey and dust-covered.

ABOUT VIOLET

VIOLET is a mixture of red and blue, both in the optical and in the technical acceptation. On a disc-spectrum it lies between red and blue, and as a pigment it is made of red and blue pigments. There is a blue-violet, that lies nearer to blue and partakes of its properties: that is, it is weak in light, does not show clearly at a distance, and is reckoned one of the cold colours. There is also a red-violet, lying nearer to red, that is warmer, intenser, and more plainly visible than blue-violet. It stands out more than blue, but serves red as a shadow. It is also, like blue, physiologically a colour produced by illusion (Scheinfarbe) and can originate in three ways. It is produced first when the red rays of the rising or setting sun combine with the reflection of the blue of the sky and spread an intense violet tone over the landscape. At the approach of twilight

the blue shades of night combine further with it, so that the evening tint of red-violet passes slowly through blue-violet into blue and ultimately into darkness. Distant mountains and woods, that appear blue in the daytime, the blue sea also, become violet in the evening. They can then under some conditions be not very different from the colour of red rocks or red roofs, because these in turn, caught by the spreading blue shadows, receive a glazing of blue to their red and so appear violet. This is the second way in which violet is produced, viz., as a shadow tone of red. The third way in which it is produced is as contrast colour to greenish yellow. Yellow light calls forth its complementary colour, violet, as its contrast. In our frequently cloudy, misty climate we have often to count on violet shadows, whereas in the pure air of the South, or high up in the clear air of the mountains, blue keeps its quality. In our vaporous layers of air even the distance appears violet. A street picture in a large town or a landscape on a vaporous autumn day have unmistakably violet distances. Yellow as a colour also

calls forth violet: the yellow wall of a house or a yellow path shows violet shadows. In bright yellow flowers the shadows, and sometimes the contours also, are violet. There are here the most different shades of violet in question. Violet, like green, has a very extensive range. It is capable of an infinite variety of shades and so a highly serviceable colour to the painter. It is useful to him as a tone for glazing, i.e. for modifying the too violent effects of the other colours. A violet mixed with white, like a pastel-colour, can, if skilfully used, be most attractive. This subdued hazy pastel-violet, as often met with in Shantung silk, is a useful, harmless colour, often employed to tone down transitions. The danger with it, as with green-blue, is that of falling into an insipid sweaty coldness, which is unfortunately experienced in many pastel-portraits. Pure intense violet is little used in painting: it loses its effect when used with other colours, however strong a colour it may appear to be of itself. With its complementary colours orange and yellow and with red it goes very well, but as shadow. Its harmonious combinations with green and

blue have already been mentioned. It brings about a pleasant transition between cold red and warm blue. If it is to be a factor in the colour composition it must be associated with green or with brown. The association is favourable to the violet. It is the only combination in which we find it in the old masters, by whom it is used much earlier than we might expect: in the ancient wall-paintings, e.g. in Herculaneum, Pompeii, and Rome. Some arabesques in wall-paintings from the Baths of Caracalla exhibit its use (Paris, Louvre). The background is a light, but undoubted green; the arabesques are kept in quite violet tones, especially in the shadows; yellow is applied in light places. In quite a number of ancient paintings we find the violet shadows on a green or green-blue ground, a sign of an extraordinarily highly developed colour-sense. The so-called discovery of modern paintings, the violet shadow, is obviously something very old. It was simply not followed up, as was not the case either with the green-blue tones. Not till the time of Watteau and Fragonard, whom, in the case of green-blue as well, we found the inheritors of the colour-sense of

the old Campanian wall-painters, does the violet shadow reappear—and this by interesting coincidence on a green-blue ground. I know but few pictures of old masters in which violet appears for itself as colour. The portrait of a Florentine lady by Filippo Lippi (Kais. Fried. Mus., Berlin) is one of these. That here again he works with conscious colour-sense is shown by his setting behind the green-clad figure, white door-frames, which are, and were intended to be, quite violet. At the same time the Monk Fra Angelico uses a tender violet in his frescoes in the Monastery of San Marco to tone here and there the mantle of a Madonna, or to tinge the vesture of an angel—the latter for instance in the surrounding figures of the 'Madonna dei Linaiuoli.' In Botticelli, too, the crimson reds merge sometimes into violet, which is meant to be their shadow. In a single little picture in the Louvre, belonging to the South French School, entitled 'The Walk of the Disciples to Emmaus,' an effect with violet is intended. The two figures stand before a green landscape, the one in a violet, the other in a brown mantle. Both the brown

and the green are subordinate to the violet: so that everything is done to make violet the dominant.

In general this colour has not appealed to the eyes of the Renaissance, or to those of its idolisers, till we come to Anselm Feuerbach, whose use of the tint is the less surprising, as he is so independent as a colourist. He finds violet, and indeed blue-violet, highly sympathetic to his solemn, essentially elegiac disposition. He uses a figure in violet with a black veil over her robe in several compositions to heighten the sense of tragedy. His 'Mother with Playing Children' (Schack Gallerie, Munich) achieves its effect by the brownish and bluish violet of the vesture of the mother. It could be Mother Earth watching her naked-born children at play that appears upon the canvas, so much is the garb suggestive of a dark black mould. Böcklin's solitary female figure in his 'Villa by the Sea' wears a violet robe. At other times he will shroud a wailing or a mourning or a forsaken figure in this colour, without aiming particularly at a colour effect, which Feuerbach never omitted. The mood was the chief thing with Böcklin: as it was

with the English Pre-Raphaelites, whose often weary, low-spirited art found great affinity in violet. Rossetti, Burne-Jones, Watts, had each of them an individual use for it, and their practice has served to draw the attention of other painters to the colour. It is from the modern painters chiefly that we know the idiosyncrasies of violet.

There are the heath scenes, e.g. with red-violet heather and the white stems of birch trees, or with brown moors and purple distances, or lonely cottages half obliterated in the violet shades of evening. Modersohn, Mackensen, Vinnen, Vogeler, the school of Workswede, were the pioneers in appreciating the colour harmonies of this landscape. Dettmann, in his 'Return of the Fishermen' takes violet, in contrast to the last reddish-yellows of the sunset, as the motive of his picture. His hefty figures in strong illumination from the rays of the setting sun draw their boat through the surf to a strand that is already dim with violet shadow. Others take a river scene in twilight, with the sun already down and only its still warm violet rays yet reflected in the surface or repeated in the atmosphere; or, maybe, cool

violet tree-shadows in opposition to hot, quivering summer sun. Wherever the presentation of radiant yellow light is purposed, violet shadows must be used as contrast. Zügel's animal pictures, e.g. are not sparing with their violet: his white cows in strong light have violet shadows, while his black ones have streaks of violet. The violet shadows to white dress have excited the attention of many painters. The portraits exhibiting the phenomenon would suffice to fill a gallery.

Pictures using violet for itself as colour tone are far fewer than those using it for shadow. In L. v. Hoffmann's 'Spring,' a wide watered prospect, with reflections in the waters, and dull green pastures and blue-violet effects of distance, is contemplated from a bright green-clad eminence in the foreground, by a woman in reddish-violet. The harmony of green and violet is the *raison-d'être* of the picture.

Th. Th. Heine has a similar harmony in violet. His 'Clouds' plants a female figure in blue-violet dress before a green tree securing by so doing that his violet does not play the part of shadow. The brown of the dress of a

companion figure in the rear emphasizes further the relation ; while grey clouds on a dark sky background, which repeat the brown and violet in an undertone, round off the whole as a composition.

That green is so helpful to violet is still more illustrated in the industrial arts, and in those of the country folk in particular. Peasants delight in putting green and violet together in aprons, ribbons, handkerchiefs, stockings, etc. They embroider violet flowers on a green ground or green, blue and violet on a red one. They have a penchant for violet stockings or gloves with a green border, or green ones with one of violet. It is so both in German and in Russian Lithuania.

Violet turns out well in many materials and especially so in wool, both in skein and knitted up. There is something noble-looking about violet cloth, in whatever shade. Both red and blue-violet are wonderful in velvet, with warm depths in the folds, and delicate pastel-tones in light violet on all convexities, the violet quality being comparatively retained in the bright lights these take up, and not lost as in green or blue velvet. But what is good in velvet is not equally good in silk, the retained

violet quality giving here an effect of monotony, at least in that smooth violet silk with a tight surface. Shantung silk has, however, the charm of the hazy pastel-tone, being rougher and looser in texture. Violet materials are quite specially dependent on the character of the lighting. Red-violet is better than is blue-violet for horizontal surfaces—e.g. for rugs, furniture, and carpets. Horizontal surfaces catch the light more, and blue-violet is more nearly extinguished by light. Blue-violet hangs better and is more suitable for tapestries or curtains A wall paper of blue-violet is more hazy looking than its rival, and therefore pleasanter: it takes brown wood furniture against it better, even if this be of quite ordinary wood. Blue-violet cushions and bed-spreads, if in dull material that does not catch up too much cold light, are very pleasing: a carpet of that colour is, however, impossible, as being too unsubstantial looking to feel like terra firma. Red-violet is quite in order in a carpet, as also in the tightly stretched stuffing of chairs. With the help of brown all shades of violet in a room can be harmonized: and if some fine green lines or a spot of yellow be added, there is a note of contrast as

well, that is particularly useful in the case of violet.

It is possible to make an accord between violet and blue. Imagine a bowl of red to brown-violet auriculas placed in a brown Japanese basket, the brown being essential to the experiment. Entwine the handle now with a blue ribbon, but wrap the ribbon round at the lower end, where it meets the auriculas, with a red-violet gauze, which will give it at that point much of the colour of the flowers, but with a vapoury bluish tone; the ribbon showing elsewhere is strong blue save at the junction of basket and handle. The result will be both harmonious and exhilarating. That violet asters with brown autumn leaves, or set in some sort of a brown holder, produce a harmonious effect is common knowledge.

Brown fur and violet cloth or violet velvet go well together for the same reason. And it is not a far leap to conclude that brown locks look well with violet, if the shade is properly graded, bright brown going with warm violet: nor need we stop at brown: chestnut with its red lights and violet shadows goes with violet. Quite black hair, on the other hand, finds

in cold blue-violet an effective contrast. In most cases, however, black and violet make too sombre a blend, savouring of sorrow and of funerals. German decorators dealt too much at one time in black wood and violet accessories: the mode horrified the critics at the exhibition of industrial art, in 1906, in Paris: they found it funereal. And they were right in that one can not feel well for long in a purely black and violet habitat. Violet with white is also depressing. For a long time the show windows of laundries were filled with white linen tied up with violet, and writing paper had to be violet or at least packed up with violet. The vogue has happily spent itself. Neither with black nor with white does violet show to advantage.

A fresh combination for violet, found specially in old industrial art, and a change from the blends already mentioned, is that with gold or silver. Violet robes of velvet, embroidered with gold, were fashionable in the Rococo period, and the colour passed from life into the porcelain factory. Many of the little figures in Meissen-ware have a violet touch somewhere—in a shawl, a jacket, or a dress.

Violet occurs in the most ancient ceramic finds, e.g. in the Greek oil bottles from the fifth Century, B.C., in combination here with all sorts of colours—with brown-red, dark red, yellow and olive ; or with pale pink, dark red, grey and violet, cinnabar, deep red, dull blue-red, light violet and dark violet, green-blue and yellow. And the precious art objects found recently in the grave of the Egyptian King Tutankamen, are often ornamented with a violet faïence.

In the Christian period there is a striking deficiency of violet-coloured ware. In the Renaissance and the Baroque time the colour was plainly not thought very serviceable. In the Eighteenth Century on the other hand it is ubiquitous. There are lovely violets on Persian miniatures, which are mostly of this period.

The colour is not common in modern pottery. Yet *Gallician* glasses are made particularly in violet and grey, constituting a kind of companion ware to Chinese jade, whose mottled surface, while occurring in green and white, but also in red, is particularly beautiful in violet and white.

The amethyst is the only precious stone in

violet. Its mild gleam is very pleasant, even if it does not rival the green stones in brilliancy. It would probably derive advantage from the silver mounting nowadays customary for jewels, creating then a very reserved, rather solemn impression.

The element of repose and modesty that is inherent in violet can be strongly felt in Lithuania, where the womens' kerchiefs and aprons are frequently of violet. Those against a background of predominantly grey heavens with the bright sandy soil and the pine trees growing out of it, give a gentle air of melancholy that is mightily appealing. Not for nothing is violet the colour of mourning in China, and not for nothing does the Catholic Church decree violet chasubles for its priests in Lent. We have a proverb here in Germany, that violet makes old. S. Roux remarks 'Our eyes cannot linger long on violet without our being inclined to sadness.' The saying refers primarily, there is no question, to a particular blue-violet, which is certainly depressing in the long run. But red-violet on the contrary, and all the hazy pastel colours in violet, be they bluish, reddish, or brownish, are highly stimulating and

not sufficiently employed by a great deal. In violet there is a rich mine of chromatic delights for the exploiting: a repertory of colour chords which ring with cheer without being too piercing.

BROWN AND GREY

THE preceding disquisitions on colour would not be complete without the consideration of some colours without place on the colour-disk, but yet necessary subjects of our thought for their prominent part in our environment. There is brown e.g., in the first place, that is so every day a colour that we are almost unaware of it is existence. It is got by mixing black with red, or yellow with green. It has no place in the spectrum. It is an earth colour in a double sense : (1) as never appearing in the air or in optical experience, but always at the earth's surface or in objects that are connected with the earth : (2) as actually of earthy constitution. There is an ochreous earth, which gives a bright, almost yellow brown, unburnt, but a dark pure brown with burning ; there is Siennese earth from which we get a red-brown, and Umbrian earth which gives a green-brown.

These earths, which are plentiful, are the readiest obtainable and cheapest of all colouring

materials; from which it naturally follows that industry and handicraft employ them much, nay, would swamp us with them, if permitted. This was particularly the case in the late eighties and nineties, before the rise of the Decorative Movement. At that period even painters were convinced that brown was the main colour in the world. The brown hue, the gallery hue, of the old masters, resulting from the darkening of the varnish on old pictures, confirmed them in the conviction. But now it has been found that the varnish can be removed with benzine, it is realized that the old pictures were not painted to look brown, but with just such a feeling for pure colour as characterizes the paintings of to-day. That there are effects to be obtained with brown pigment there is no one will gainsay. In fact we are all the more willing to admit it, now that we are not only out of the brown juice into a brighter coloured world, but often at the other extreme of unmitigated and glaring colour.

With the pictorial qualities of the other colours laid bare, we are in a position to attend also to those of brown. As to its properties as means of contrast or of harmony, we are

not able to give very definite answer. We can only posit in general that in these respects it partakes of the properties of the colours which, together with more or less black, are involved in its composition. Which being so, it is possible to put its properties as those of the warm half of the colour scale, i.e. those of the red and yellow browns.

To the painter brown is, what the scaffold is to the sculptor—the skeleton upon which he lays his colour mass. He makes his drawing with it: and if his tendency is to warmth of tone in the representation of his subjects, he gives his canvas a bright, brownish wash, on which to work. We cannot say for certain, when this process was first devised. The fact that all painted materials in the finds at Antinoë are brownish, does not necessarily infer the employment of the process: the brown may never have been superimposed, but be part of the ageing process.

Egyptian art exhibits rather an extravagance in brown tones, in conjunction with red and yellow: this colouring predominates on the yellow stone walls. As soon as a yellow material was available for painting, this decoration with brown tones was entered upon.

On yellow papyrus too figures and hieroglyphs were designed in from brown to red-brown tones. The outstanding example is 'The Book of the Dead' (British Museum).

In the Campanian painting as in Byzantine mosaic, brown is only used for outline. In the first period of fresco painting on a gold ground, when the emphasis was still on the colour, the use of brown was trifling. Only when line composition was ardently practised in the Renaissance, did brown recover its importance, because of its power of defining form. Even then it was not prized as a beautiful colour. Giotto used it a great deal for his expressive brown contours—to be discussed at more length elsewhere. We have mentioned Mantegna's portrait work before. We must here mention his portrait of the Duchess of Montefeltre (Palazzo Pitti, Florence) for its gold-brown in the dress, which tells as a real colour against the bright green-blue of the atmosphere. A picture 'Golgotha' by Signorelli, depicting Christ on the Cross with a kneeling Magdalene, has brown with a definite share in the colour scheme. The brownish wood of the cross on which the brownish body hangs and the brownish tone of the earth behind, are set in

vivid contrast to a bright white-grey atmosphere, with an effect that is not repeated in the whole of the Renaissance and appeals to one as quite modern and produced under the influence of the art of China and Japan. Another application of colour unusual in the Renaissance is seen in a picture by Botticelli, 'Tobias with the Angel' (Academia, Florence). A violet atmosphere lies over a deep brown earth and over the distant landscape. The mail-clad angel has a steel-blue suit of armour and carries a flaming pink sword: the same colour recurs in the wings of the angel on the other side of Tobias, who is kept himself in a subdued tone of colouring. All of this, with the brown earth on which blue gentian blooms, makes a rare and highly individual colour harmony.

That Titian and Velasquez, the grand-masters of colour, did not allow the picturesqueness of a golden brown to escape them can be illustrated by many examples. The already mentioned Lavinia, by Titian, has a gold-brown dress, and there is a portrait by Velasquez, of his own wife, in brown costume with golden sheens upon it (Kais. Fried. Mus., Berlin). The Dutch painters have made a speciality

of brown for the dusky depths of their taverns from which the colour notes on their figures stand out in harmonious relief. This is the style of painting that is designated as 'in tone' (cf. 'General Survey,' p. 5). In it the conflicting bright tones are brought nearer to reconciliation by a common brown general tone. The brown is applied in a very fluid state to the white chalk-ground of the wooden block and remains as clear and transparent as we know it in these painters. The other colours, on the contrary, are put on thick and so are more body-like and substantial, while the brown acts as an atmosphere. The process here was very important. Tenier's, Ostade's or Brouwer's country taverns with their warmer or colder chiaroscuro and bright-clad peasant figures which stand out so vividly, are universally famous. Brown with Rembrandt is a dark gold-tone, a shadowy yellow : his deepest obscurity gets some mild ray of yellow light. Typical illustrations are his 'Robert Bruyning' (Gemälde Galerie, Kassel) with its smooth face-painting and gold locks with a gold-brown half-light about them ; and his last work, the 'Jacob's Blessing' (Gemälde Galerie, Kassel) with its almost visionary power, where the

dim yellow light collects on the dying head of Isaac, then plays once more on the hands engaged in blessing the fair head of Jacob, while the rest of the entourage are more and more lost in brownish twilight.

There is a modern painter who brings his pictures to the surface, as it were, out of brown profundities. That is Carrière, with his movingly expressive portraits. The tender faces, with never much colour to them, swim in a brown obscurity. Lenbach may here be noted with his fascinating portrait sketches on a bright brown ground. He used to remark that no colour compares in loveliness with such a ground and that it is a duty to retain as much of it as possible: and it is incredible with how few light colour-touches he can attune a tender face harmoniously to its background.

Brown plays a part in landscape also. It is so used by Goya in his 'May-tree' (Kais. Fried, Mus., Berlin) where indigo-blue in the sky makes with the brown of earth fine harmony. The whole picture is in gloomy shadow, but for the luridly illumined house, on a hill, before which the gay crowd about the May-tree is assembled. There is a certain

presentiment of storm in the brown with the indigo.

Heavy brown mould with threatening grey clouds in the sky, is to some extent a recognized symbol for the struggle between earth and sky, and the fact is exploited in 'A Stormy Day' by Overbeck. The association of brown and grey is a very familiar one in Nature. Föhn-time in the Isar Valley has inspired Haider, Breyer, Pietsch, and other Munich painters. Leafless trees with brown branchage, rivers in flood in yellowish grey, brown tones as far as the blue mountain edge behind, and a reddish-grey sky are the stock elements of the composition.

Brown's part is naturally greater in interiors through the influence of wood floors and furniture. Adolf Menzel has an extraordinarily fascinating room-interior (National Galerie, Berlin), in which the light that passes in through open shutters is mirrored in the polished brown planks of the floor. The brown furniture is charming for its colour, and by its clear-cut drawing opposes a sense of solidity to the impalpable airiness elsewhere. Firm framing for flooding light, which enters from between crowded tree tops, and is possessed

of a greenish colour, is given by brown door-frames and Empire furniture in an interior, 'Quiet Mid-day Sun,' by Huth-steiner (National Galerie, Berlin) Schwind's lovely 'Morning-hours' (Schack Galerie, Munich) is widely famous: the green curtains and the brown furniture give definite outlines in the room which is so pleasantly lighted up by the morning sun, and from whose open windows a youthful figure looks out.

The rôle that brown plays as warm colour is played by grey as cold. It is produced from black and white with the assistance of some other colour, with whose properties it is to be touched. There is blue-grey, green-grey, brown-grey, or violet-grey: so that it is formed mainly from cold colours. Like brown it is a colour to which we are accustomed in daily environment and to which we do not pay much attention; whose principal role is indeed to serve as a substratum for other colours, to give a cold general tone, where a brown backing will give a warm tone. Brown is an earth colour, grey on the contrary an atmospheric tone: if the one remains heavily on the ground, the other mounts lightly in the sky. While brown binds other colours

compactly, grey disperses them. A grey background is as favourable as a brown and far more difficult to manage. Painters employing it are therefore a good deal rarer.

The grey tones do not last either : they turn yellow with the passage of time. It is difficult, accordingly, to obtain a just opinion of the greys in their pictures. In some frescoes there are fine grey tones : perhaps the finest in their kind in Michæl Angelo's ceiling in the Sixtine Chapel, which staggers one as a colour feat, after one's always being told that Michæl Angelo had no sense of colour. So far from his being denied that gift, all is here keyed to grey with the most subtle feeling for colour, beside which the careless miscellaneously botched together coloration in the pictures by Botticelli, Piero di Cosimo, Luca Signorelli, Pietro Perugino, Domenico Ghirlandaio, Cosimo Roselli, in the same room, is almost puerile. This ceiling alone is worth a trip to Rome. The Michæl Angelo who has been extolled hitherto as the creator of incomparable forms, is seen here to be at the same time the ripest of all colourists.

This sensitiveness to the beauty of grey tones we have in Rubens also, who demonstrably

used a grey ground for his painting, and who often allowed this ground to stay as an atmospheric tone, which plays round his figures with the pearl-like gleam of their flesh and with their cold lights and warm shadows. Some other Flemish and Dutch painters have this same flair for grey. It was very natural to them in the grey atmosphere of their home. In Franz Hals we have grey treated purely as a colour 'spot,' and withal specially fine grey flesh tones. A master of our own time, Max Liebermann, considers him the greatest of all colourists for this very sensibility to grey tones, out of which Liebermann himself has made the problem of his life. 'His grey tones are fine,' counts as supreme praise for a painter. 'Grey makes the master,' writes Hans v. Marées once in his letters. That the secret of the fine interior effects of Teniers, Ostade, and Brouwer, is their grey and brown atmospheric tones, has already been pointed out. Teniers affects especially the grey tones, Ostade and Brouwer the brown.

Grey was a favourite colour in the Rococo, when there was a refined taste in colour and delicate broken tones of it were particularly

prized. A master of this period with a quite modern technique, well fitted for pastel, and with very subtle effects in grey, was Chardin. His interiors have figures in a rather loose, merely decorative manner: but his fine tasteful colours are bound together by the grey undertone.

The channels by which this feeling for colour passed on to our century were the Englishmen, Gainsborough, Reynolds, Romney and others. Romney's 'Miss Robinson' is in white, and to her big grey muff some pink bows are skilfully attuned. There is a grey background. Whistler practised the same style of coloration later. What Carrière brought out of brown depths to the surface, Whistler brings out of grey: and if he introduces brighter colour notes occasionally, these have all to avoid disturbing the distinguished harmony in grey. Witness the portrait of his mother (Musée du Luxembourg, Paris).

The French naturalists of the nineteenth century searched out the subtlest shades of grey. One of the greatest of them is Corot. These tender nebulous tones, whether of willows by the brook, or of tree-planted

meadows in the misty light of morning, or of distant houses with fading groups of brightly-clad people, are the only things worth painting.

Of German painters, Diel was the first to paint the grey harmonies in Nature. His fascinating moorland-scapes in mist have long been known to everybody.

The representations of misty landscape are almost too many for particular mention. Suffice it to recall the grandly conceived Neckar views of the prematurely deceased Stuttgart painter, Reiniger, or Cissarz' picture called 'The Railway-station,' in which a yellowish morning sky is contrasted with the grey twilight of the interior, or 'The Grey Winter's Day,' by Küster. In this last the red note given by the red house-roof, in the midst of a flat river-watered stretch of country with a widespreading grey snow-laden skyscape and with a touch of lying snow, makes strong impression on the vision.

The human skin with its fine grey tone has ever-recurring attraction for the painter, and many follow Whistler in making it a theme of representation. The flesh tones in the paintings of Dora Hitz, despite her great variety of colouring, are all conceived in

relation to grey, and the 'Street-urchins' of the Russian Marie Baschkirtscheff (Luxembourg, Paris) show the grey obsession under discussion. These are only two out of many possible examples: for the grey tone-register presents ever-new problems to the painter, which he often fails in solving.

Industrial art finds the same difficulties as does painting in the use of brown and grey. This is especially the case with embroidery, in which understanding of the qualities of the colours is much called for. A bright pattern on a grey ground is blurred to a weak general colour-note. Give it a brown backing, however, and the colours will be more defined. Brown emphasizes colour, grey dissolves it. The effects are observed in patterned materials.

As colour, it has already been remarked, brown goes with green. Viennese art products and coloured silks are of interest in this connexion. Black is used in them along with brown and green to lend strength and clear design, yellow spots being employed as well for contrast. Brown is felt by this means as a full-fledged colour and not only as a background.

Brown as a general rule is not fitted for light materials: it will always keep some suggestion of heaviness, whereas grey has a light effect. Grey by itself for this reason is not suitable for upholstery. It must always be anchored down by some touch of brown colour, just as brown needs breaking up with grey. Brown is better than grey for furniture velvets or plushes: it has fewer gleams and is more reposeful. It is the same with carpets: with which again, brownish shades are to be preferred; their warmth makes them superior on the horizontal surface. The colder and more greyish tones on the other hand are suitable for curtains and wallpapers: and this is true not only of pure grey, but of all the colours that incline to grey, whether they be greenish, yellowish, bluish or brownish, or violet. There is only a fine line of demarcation between brown and grey: in combination with other colours the merest shade makes the difference, as everyone knows who tries to match an embroidery or a room decoration or a costume with brown or grey. The same principle is applicable here as in painting: if the general note is cold, the proper match for it is grey:

if it is warm, the proper choice is the brown. Bezold offers scientific confirmation, when he says: 'On a neutral field (grey, brown) the cold colours produce more vivid contrast when the field is brighter; the warm colours when the field is darker.'

The difference between brown and grey can be worked out further in connexion with different materials. Brown is better in velvet than in silk: the hazy, soft quality of the velvet is an advantage with it: it easily gets crude-looking in silk, especially in its reddish shades: in its greenish ones it looks better. On the other hand grey is too insipid in velvet: it produces a better impression in silk, looking almost like a skin shimmering with a pearl-like radiance. It is a colour that fits every complexion but the jaundiced, with which it is inclined to look dingy. Brown on the other hand is plain-looking as neck-wear unless used with some fluffy transition.

Unquestionably the most suitable material for brown is wood, especially as this was employed in the German Renaissance, the best expressions of whose striking sense of form have come down to us in the form of brown-coloured wood-carving. The German

Renaissance has produced not only carved beam-heads or carved timbering, but whole timbered ceilings and carved panels for complete chambers; altars too, rich in the figures of knights or of saints, and lovely pieces of carved furniture, in which the delightful colouring of the wood is as notable as the shaping.

For stoneware the principal colour is also brown. This quite everyday colour is capable of refined effects in fine materials. There are very pretty brown teapots and coffee-pots of English make. In porcelain we have no brown, save for the first produced by Böttcher, that was polished like stone and then looked almost black. Figure designs were cut into it, and shewed of course the brown of the natural material.

The colour is excluded necessarily from glass and any transparent material.

Brown leather is only employed in modern industrial art for book-binding. A volume bound in leather with fine gilt edges is very artistic: all Renaissance stamping and indenting is however to be abjured.

One other lovely brown material is bronze. In Japan it is lacquered and treated with

especial refinements. We are not so fastidious however in its preparation, and our alloys are not so good. The brown we obtain in it is not so fine either as that of the Japanese.

As for grey, it offers manufacture less plentiful material. In old art industry there was the grey ware produced in Thuringia and in Bavaria, and still produced there. Attempts are being made at a present day revival of this old German art both in Cologne and Rudolstadt. Artists like Barlach and Wewerka are lending their assistance to it.

A craft that worked with grey material, but that has unfortunately gone out, is the production of pewter. It flourished in the Renaissance and has left valuable pieces of a pleasant grey colour behind it.

Of a mixed gleaming and grey effect we must designate silver, whose combination with other colours solves a profusion of intriguing problems. How jewels gain by being set in silver, we already know. Silver played a great rôle in decoration in the time of the Rococo; and offers, in the airy charmful effects in silver and blue and silver and yellow on walls and ceilings in the little castles in Nymphenburg, beautiful companion pieces

to the white and gold wall decorations of the castles in Versailles. An Arabian ceiling in the Mosque in Jerusalem carried out in gold and brown (see ' Polychrome Ornament,' by Racinet) offers however a direct contrast in effect. It is heavy and too near to the beholder, seeming almost to crush him, while its silver-ornamented walls seem airy and far removed. The rival effects of the near-seeming, ponderous brown and of the airy far-removed grey, are to be studied here in immediate proximity.

The effects of airiness and of far removal produced by grey is not dependent on material. It is felt specially in the grey glazing that we see on figures and vases in Copenhagen ware. Grey seems peculiarly devised for the airy and fluid-like surface of this pottery. It occurs in every shade from a breathlike film on a glass to a lustreless mother-of-pearl. The expensive Gallé glasses, a modern innovation in manufacture, pass gradually from some shade of pure colour into grey.

The only adornment, apart from the half-jewels called the grey- and white- flamed tiger-eyes and cat's-eyes, that Nature produces

in grey, is the grey pearl. It is at once the highest perfection and the noblest embodiment of grey colour. The most priceless and finest thing in the material, the crown and apotheosis of its charm, is produced in the case of grey, as of other colours, by Mother Nature.

BLACK AND WHITE

IN the physical sense white consists of a fusion of the coloured beams of light of the spectrum. That is to say that sunlight is colourless or white, while black results from the absence of all light whatever. This fact is incontestible, but for our purposes it is beside the question, since in the world that we can perceive with our limited senses, we cannot observe it. The colourless light appears as yellow to us, since it is seen through a troubled medium, and the deepest shade of night to our perceptions is always touched with a shimmer of bluish or purple. Black and white do not belong therefore to the colours physiologically produced by illusion (Scheinfarben). The scientists dispute whether black is a colour. Helmholtz is against the ascription, Hering is for it.

On the contrary both black and white phenomena in Nature are subject to change, and assume the most varying colour tones,

according to the distance of their removal and the kind of lighting to which they are submitted. The white snow-peaks, e.g. are deep-blue or violet, according as a shadow falls on them, and the sides lit up by the sun have a fine yellow transparent glazing. On cloudy days they may seem at first sight white: we have only to hold white paper beside them, however, to recognize that a light greenish tinge lies on them. With snow-prospects it is the same: however white their apparent look, the painter little succeeds in reproducing the impression they make with white paint out of a capsule. He would have to employ all the illusive colours of optical science, to call to his assistance the coloured shadows and atmospheric tones, and use all the colours in his paintbox, to give even a distant notion of the gleams and radiance of white snow. It would be the same for fruit-blossom or white clothes. Colour photography which makes pure white from a blending of tiny red, blue, yellow pigment spots, no longer seen as separate in the projection, but clearly seen when the plate is in the hand, has its lessons in this connection: whence the formula of the

Pointillists, who make their gleaming white by colour spots on a physicist's suggestion. The difference between white in Nature and white as a pigment is that the former is a co-action before our eyes of all coloured rays, which knit together and unravel again in accordance with degree of lighting or distance of removal, while the latter is a blend, no longer in process before our eyes, of all colour elements. It means practically the difference between the white chalk-cliff on the sea coast which fades out in the distance and on which we see the play of coloured lights and shadows, and the piece of white chalk we hold in our hands and in which a dull fixed white is all that is visible.

It is similar with black. Even the blackest darkness is not as black as a piece of black paper we can hold in our hands: it has always a touch of some colour or other, whether of blue or purple. A block of black porphyry has blue lights and reddish shadows, black hair or a black fur has always shimmering lights or violet half-tones. Generally speaking, pure black is scarcely ever seen in a landscape, in natural forms at any rate: if

it ever occurs it is in artificial objects which for some purpose or other have a coating of paint upon them. We see something interesting of the sort in the villages in the Saal neighbourhood: in the shape of the great black gates at the entrance to the farmsteads. They are solid below, but put together above of a decorative lattice of tree-staves, and with the usually pinkish yellow or bright green painted buildings make a very taking picture. As for black as a colour, most painters dissect it as they do white, and portray it with blue, red or brown, in accordance with optical experience. For all that has been said above pure white and pure black have an important place in composition with colours and especially in the so-called local-tones: they are weighty factors in composition.

To start from the very beginning, the foundation of every picture, be it canvas or fresh plaster, is white in colour; and the painter who does put on a tone of brown or grey, has a white ground to take account of. The earliest Greek painting with which we are acquainted is on a white ground: it is in the form of painted grave-steles, produced

first with red designs on the white marble, then with a variety of colours, all of which, however, had white as a foundation. In the sixth century appear the white oil-flasks with red tints upon them: white statuary was never left blank white, but was touched in colour in places; though there was no attempt at obtaining a wax-work realism by means of it. A decorative effect was all that was aimed at and a statue would receive black hair and a red vestment or a red mark of some sort. A statuette in the Louvre designed under Assyrian influence has, e.g. red head-gear, a red ornament on the breast, black hair, and a red pitcher borne on the head. The rest of the figure is white and was left so with decorative purpose. Over other polychrome statues it is impossible for us to linger: but undoubtedly there was more account made of the white sections than is generally assumed: the whole surface was not treated with pigment.

In Campanian wall-paintings there was often white surface with the green or the red. In the famous 'Aldobrand Wedding' (Thermae Museum, Rome) Venus speaks to the young bride while the bridegroom approaches

hesitatingly. The figures are in low tones on a white foundation. Ernst Pfuhl publishes many examples of this kind in his 'Masterpieces of Greek Painting,' the originals of which are also from Herculaneum.

In later fresco paintings also we find the white foundation the rule. In the arcades of Santa Maria Novella in Florence, there is a whole cycle of illustrations of 'The Divine Comedy' from the hand of Paolo Uccello. The figures are all in red and greenish on a white ground; and the paintings by Fra Angelico in the Monastery of San Marco with their delicate colours have for the most part the same white foundation.

In the easel pictures the white canvas is scarcely ever visible, and of white or whitish background we hardly find trace in the Renaissance. Apart from Signorelli's 'Golgotha' we have already referred to, which is a composition in brown and whitish grey, there is little use of white pigment in the Renaissance. White plays little part in spite of white kerchiefs or white vestments. Only Tiepolo at a later period puts white and yellow together decoratively. Titian, however, studies the beauties of flesh-colour against white. He

has employed his ripest talent on his 'Danæ,' now in the Museum at Naples, who lies in incomparable loveliness on a couch of white linen. There is no finer subject in painting than that of the nude on a white background and no one has since surpassed him in the rendering: he has solved the problem finally.

White plays a great rôle with the old Dutch and German masters. This is especially the case in portrait. The black dress with white collar or coif was in general use in their period, and the masters did not fail to exploit the advantages of the simple and decorative costume. The white 'spots' the said articles present were employed with full sense of their colour quality, so as to influence the composition. Witness the 'Madonna of Bürgermeister Meier' by Holbein (Dresden, GemäldeGalerie). In contrast to the bright colours of the figure of Mary the painter has set the row of white coifs of the kneeling benefactresses, and the line is decisive in the composition.

There is a very individual effect in white in one folding panel of the altar-piece by Matthias Grünewald at Isenheim. The white mantle of

Mary is made the focus in the picture of the Crucifixion. It spreads wide over the figure of the Virgin as she falls, it covers one portion of the gloomily dark sky and a part too of the red mantle of the disciple John, and it is in intimate relation with the livid white of the pale figure of the dying Saviour. A companion picture for its setting of white against red on a gloomy background is the portrait of Cardinal Albrecht by Lucas Cranach (Pinakothek, Munich).

The Dutch genre painters dearly loved the use of white. Witness a white kerchief and a white apron as intercepters of the weak ray of light introduced from above in the already-mentioned picture of an interior by Pieter de Hooch: witness also the toned white wall with the black picture-frames, to which the red jacket, easy-chair, and shoes give contrast. And here Terborch should not be forgotten with his beautiful painting of white silk, set in contrast not infrequently to brick-red. He may have a woman in white coif in the background before one of his toned white walls in contrast to another in the foreground in dull-red bodice and white silk skirt at a piano: or he may have a woman in white silk with a

bronze-coloured bodice edged with white ermine, a combination of colours already mentioned with appreciation in our chapter on yellow. In one of Vermeer van Delft's canvases a young woman with a pearl necklace and a gleaming yellow bodice is set before a white wall in the same effective relief as the just mentioned figure of Terborch.

The happy combination of white and flesh-colour led to the repetition of its use for female portrait. Van Dyck painted his wife (Marie Ruthven, Munich, Pinakothek) and the wives and daughters of many English aristocrats, and the English painters of the eighteenth century carried on the tradition. So originated, e.g. the absolutely delightful portrait of 'Mrs. Hoars and Child,' by Reynolds. The lady, who is in a creamy white dress and whose little daughter is in white, leans against a brown-green tree with her daughter in her arms. Both have the same delicate complexion, which is set off to great advantage by the white.

At the close of the colour-blind time last century, when colour was rediscovered by the Impressionists, effects in white were a favourite

problem. For the first time since Titian Manet represented a nude figure against white in his 'Olympia.' The various-toned white is set simply and broadly by the figure: and the most essential difference is made between them: the shadows they cast are in the same green, the light of the body tending to a warm reddish tint, that of the white sheet to a cold greenish. The contrast is emphasized in the dark green curtain, against which the pink garb of the negress standing behind stands out strongly: in the red flowers of the bouquet and the towel she holds in her hands there is further colour contrast. Colour composition is carried out with the greatest deliberation in this picture. Precisely for its white background Herkomer's 'Lady in White' made great stir in the eighties of last century: the only colour elements were the face and the yellow gauntlets. Miss Grant's portrait was the universal topic of conversation.

A fairly recent portrait by Graf, 'Viennese Children,' is a masterpiece. The disposition achieved by the three correctly-distributed white dresses of the children, and of the black of their shoes and stockings, is so convincing in the brightly illumined space, that we have

a delicious feeling of pleasurable repose in looking at them. Klimt paints a portrait melting away as it were into white, of a tender female figure. The violet streaks in the white dress make it still hazier and assure the dull flesh-tone of the subtly-drawn face of its effect. Slevoght's male portrait 'd'Andrade,' feelingly painted in white, is generally regarded as unique.

White is an important colour in landscape, in snow-landscape in particular. The earliest snowscape known, that by Breughel, the elder, in the Hof Museum, in Vienna, is a priceless piece of painting, both in colour and in sentiment. The green, cloudy heavens, the black branches, and the white snow are accorded together so convincingly, that one literally feels the cold, while by the way dogs and hunters in the foreground crunch into the snow, the absolute stillness of the winter's day is apprehended.

We get modern snow-landscapes from Russians, who are at an advantage for appreciating the problems snow presents to painters —whether it glistens with blue lights and violet shadows, or rises soft and white out of a turbid dark green winter sky—from their

habitat. Among recent German masters Klemm stands out by his vigorous treatment of the subject. He makes it gleam intensely before a dark heaven and enlivens it with gay costumes.

Hodler revives the old fresco technique of the white painting-ground. In His ' Departure of the Jena Students for the Campaign of 1813 ' (Jena Universität), his brightly coloured figures are in relief on a white wall surface. Painters are tending more and more to return to the white background and indeed to leave the white surface untouched between the separate colour patches. The Pointillists get more resonance by the process. It is the tendency in white to soften hard edges in colour (see chapter entitled ' Yellow as Colour and Light ') that is here turned to account. In Moorish ornament the separate colours are parted by white lines on which the colours throw soft new blends of tone (see Racinet a. a. O. Paper XXIX).

But if by white the other colours are blurred, by black they are intensified. The thesis can be confirmed from Racinet's study of Moorish ornament (Racinet, Paper XIX), in which the same ornament is given

both on a white-yellowish and on a black background. The ornament in the first case is soft and deliquescent, in the second light and hard.

For the study of black as a colour we have first the black urns of Greece with the well-known white and red decorations. Black was also used as background in the Greek wall-paintings. There are black house-walls in Pompeii, from which the coloured ornaments and pictures stand out strongly. Dainty little friezes were also done direct on a black background. However, black has not been used later as a foundation.

The beautiful colour-effects to be obtained with black were first discovered, however, when black Spanish costume became the fashion in the time of the great Renaissance painters. These almost all employed it as background in their distinguished looking portraits of princes or men of rank. Rubens painted his savants practically always in inky vestments. Titian, too, and Velasquez, Rembrandt, van Dyck, Franz Hals, are responsible for such portraits. Think of Van Dyck's high-bred portrait of Prince Ruprecht of the Palatinate, in black suit on a green ground (Vienna, Hof Museum),

or of Charles V, by Titian (to which we have already made one reference), or of 'Captain Barro,' by Velasquez (Kais. Fried. Mus., Berlin), whose giant proportions in black tower up so impressively against a yellow pillar; or of the famous 'Stalmeesters,' by Rembrandt, a group portrait of exceptional effectiveness. The strongly personal heads are set off by a colour-harmony of black, brown, and red. Black are their clothes, brown the atmospheric tone, and red the corner of the table which catches the illumination.

In modern portraiture that already mentioned Bürgermeister of Hamburg, by Slevogt, stands in his slender proportions, with his intellectual-looking head, and with his court dress of black velvet, in a banqueting-hall that streams with yellow light. A similar full-dress portrait is that of King Gustavus V of Sweden, by Anders Zorn. The dignified-looking figure in black evening dress is set in a palatial interior of white ornamented with gold.

Black is more employed in its relation to other colours in Chinese art than in ours. There is scarcely a print or a picture in which a pure black does not fasten down the colours: does not have its anchoring effect. In the

Chinese Exhibition which, in Berlin in 1910, and in Paris in 1911, made us acquainted with the great art of China, its masterly employment of black, as exhibited in all styles from the twelfth to the eighteenth century, could not fail to arouse admiration. And in the much better known Japanese art of wood-block printing the use of black with other colours is frequent, both as a steadying element for the colours grouped about it, and as a direct factor in colour harmonies, which are particularly striking when the black occurs with red and a little green.

But after all it is the colour effect, or rather the colour contrast of black and white, that has been most exploited in art. The moderns have looked for this contrast just as much as the old painters of the 'Vandyke style' of costume. In Manet's 'Execution of Don Pedro' (Mannheim), the white body-belts and sword-belts on the black uniforms of the firing-party have something appalling, something regularly horror-inspiring in keeping with the sentiment of the whole picture, which is greyness itself in the remaining portions. Black figures against a white wall are always arresting to the

beholder. Think of the picture by Artur Kampf, in which the company of black-dressed mourners crowd into the whitewashed house-passage: the effect of the black against white and the contrast of both with the red-tiled floor is contrived deliberately. Hodler achieves an overpowering effect in 'Night,' one of his earliest canvases, by his severe and harsh use of black, covering his sleepers who lie on a grey-whitish ground, either half or to some extent with black drapings.

Black and white has, however, a peculiar realm of its own, which it would be a pity to leave without mention—the black line or the shaded space on white paper. Drawing offers in all ages not only an adjunct and assistance to painting, but magnificent creation on its own account, born of the peculiar and sensitive expressiveness of black and white. Witness the performances in different periods of the great German draughtsmen Dürer, Holbein, Rethel, Schwind, Ludwig Richter, Wilke, Gulbransson, Nolde, and of all the others who achieve the suggestion of colour by drawing.

Aubrey Beardsly, the too early deceased English line artist, who has left such a mark on

the present-day school, created veritable pictures in pure black and white, revealing the beauty of white paper. How magically he turns its white expanses to account, and with how few subtle strokes he makes a composition! A tiny head sinks in a big flowered canopy-bed and—lo and behold!—the great blank of white paper that frames it is turned into a luxuriant sleeping chamber; or just one or two fine strokes and Isolde with a sphinxlike absorption in her tiny face presents with dainty hand the love-potion. Her tall, slender figure in her legend-embroidered vesture is lost in the unoccupied whiteness of the foreground, while a red-tinged curtain cuts off the background that was abridged already beneath hand and philtre. In the Messalina drawings, too, the darkness of night is made appreciable by a little intense black above the heads and around the upper parts of the flitting figures. Darkness seems to fill the whole space the paper presents, although there is nothing but whiteness below, with an impenetrability enhanced by the whiteness.

White paper is probably the most widely produced of all the materials of culture. It could engulf all other products in its waves.

To whom does it not occur first of all things as the representative of whiteness ? White paper, made purposely for writing, printing, painting, is the badge of our civilization. We should have to penetrate deep into the primitive forest to get out of possible sight of a piece of printed newspaper : and we should realize there, in the forest's green and glowing revel in colour tone, to what a great extent black and white are *the* concomitants par excellence of modern existence. Would not ' black-white-culture ' express the endeavour of hundreds of millions ? Are there not hosts in whom colour-shyness is stamped from infancy ; yes, even inherited ? Many have grown up in the cultured milieu of plaster busts and steel engravings. Of this milieu, to be sure, you can use the epithet ' by-gone ' : but its results still survive in the general unsafeness in the judgment of colour. Not everyone who would be considered modern and who surrounds himself with colours, understands them. And using the single colours separately is not enough : they must be tuned to one another and weighed one against another in the right proportions. And this weighing can be done with black and white, not only in

drawing, but in the practice of industrial art.

Of black and white in industrial art we find very old examples. There is first of all the Sgraffito, a design chiselled in black on white marble: it is found already in classical times and was retained in the flooring of old basilikas and even in the Italian Churches of the Gothic, the pillars and walls of which of this period are of black and white marble in layers. White wood is the chief material for modern house decoration indoors, especially for kitchens and bedrooms. It makes few colour problems. Any colour can be used with it, without fear of discord. The danger is rather of insipidity. It is advisable, therefore, to reinforce the colour impression it gives with black lines, as is done in factories in Vienna, giving them an enormously constructive appearance and reminding one of the piquant charm which a well disposed note of black gives to any colour-combination. So in house furnishings. No one uses pure white upholsterings or wall-papers. In patternings choice has always to be made between colours with white and colours with black, the character of the tints being softened by the white, and emphasized by the black, though

this is more noticeable when several coloured tints are put together. There is no stuff for which a black or white ornament in line will not be a harmless decoration. With stripes, on the other hand, and largish patterns, things are different. In these faults of taste are often perpetrated. Too broad a stripe of black or white can spoil the loveliest colour scheme. Black contours reduce luminosity in the colours they separate when in the wrong width, as much as they increase it when in the right. And it is the same with bright embellishments on black or white materials. In fine lines they are practically all commendable, in broad passages they need careful deliberation. Oriental embroideries celebrate regular colour orgies on black backgrounds, in which every colour, from bright orange to dull violet, takes its part. There are attractive old samples in this style and there are modern abominations. Those brought back from the East by the soldiers in the Great War are not usually good samples. Just as green and blue are pinned down with black, so is every other colour, but the black pattern must be accommodated to the strength and luminosity of the colour The same

ornament will not serve for rich green and delicate pink.

About pure black and pure white clothing materials there is not much to say, for any stuff and any form fulfils in due place that which experience and custom demands of it in accordance with tradition. Black makes a simple, or dignified, or a festal impression, according to the particular application; and so does white.

White has a great realm of its own in linen and lace, which have been objects of artistic handling from time immemorial. We have still finely embroidered and beautifully sewn body-linen from the time of the Renaissance. And its patterns still persist in some districts: the Schwälmer peasants, e.g. have still quite broad frills of embroidered linen on their garments. In Lithuania the long-sleeved shirts are prettily decorated with black line ornaments. In Russia the same takes place in red and blue, but the effect is less tasteful. The Macedonian peasants show good taste in black linework on white linen, or even on mantles of white goat's wool. One is never tired of looking at these braidings and laces which emphasize the good cut of their garments so

effectively. The appearance of rich Turkish ladies in Uskub, is picturesque in a different wise. A kind of domino of black silk shrouds the form, while the face is completely hidden by a black mask. The domino is tucked in below, so as to show the white stockings and black slippers, and the hands are thrust into a gigantic white muff.

The ancient art of linen open-work is specifically Western: and the lace industry sprung from it has produced the most precious work in white material that we Westerners can boast. It originated in Italy. Venice was, and is still, a special lace-making centre; and the raised lace it produces is the most expensive of its kind. The most comprehensive collection of lace-work is at the Cluny Museum in Paris —Venetian, Chantilly (with its Baroque patterns), Flemish bone-lace (still made in Silesia), Valenciennes, the laborious Spanish bone-lace (made only any more in nunneries), Teneriffe and Irish crochet (both very old industries), likewise Madeira, another decorative form of the old open-work. Interest in real lace has been aroused anew since it has been seen that hand-made lace differs from machine-made, as much as a pedigree racehorse from a

common hack. It has become worth while for many a trained artist to design lace-patterns. Expensive articles are made again in Silesia, particularly at the schools of lace-making. It is superfluous to speak about the combination of white lace with other materials: any self-coloured material without pattern makes a good background for it. It must not be overlooked, of course, that white does not strengthen the working of colour, but dissipates it, so that a coloured stuff on which white lace lies is weakened in effect, while with black lace the effect is the opposite: a very strong colour must therefore never be garnished with black lace, a very weak colour never with that of white colour. On a patterned material all lace is anathema. Black velvet with good white lace is the perfection of black and white decoration. Add white pearls to the picture and the mind recalls the aristocratic portraits of Rubens and van Dyck.

The gleam of white pearls is the noblest adornment that Nature has given to mankind. She laid it already in his cradle. In primitive sagas and fairy tales they are already threaded into strings. They adorn the brow of the Queen of Sheba: they smother the bodies of

the princesses in ' The Arabian Nights ' and are woven into the black plaits of Persian houris. As adornments they were set in every possible style. In the Renaissance stress was laid on the regular forms, either circular or pear-shaped, which we can recognize in the finery of fair Florentines. In the Baroque period irregularity was the quality prized. It is seen in the so-called Baroque pearls which were employed for fantastic adornment of every kind and were even assembled into small figures and set, along with corals and other precious stones, in silver. A complete collection of such gems is to be seen in the Green Vault (Grünes Gewölbe) in Dresden. The chief market for the genuine pearl is Paris. The handsome pearls on view in the shops of the Rue de la Paix, or on the chief Boulevards, would put even the boasts of the fairy tales of Arabia to silence.

As a white material we must mention porcelain ; for its whiteness is an essential part of its attraction. First of all, all porcelain is white before the decoration in colour is applied to its surface. There has always been porcelain, however, that was intended to remain white and to impress without painting

and purely as form, simply and solely by the beauty and colour of its material. In China this is a quite special type. It is called 'Blanc de Chine' and has the finest little cups which are dainty in shape and transparent in body. Both in the old Meissen, Berlin, and Nymphenburg manufacture, there are works of art in the genre, mainly in figure form and white, always without spot or pattern.

In modern pottery-ware, as in the Schwarzburg factories, which work to the designs of Barlach and others, and turn out very artistic products, the figures are very often left uncoloured. The broad plain surfaces give a chance to the material itself and to the subtle play of lights it engenders. The Vienna factories add often to the white an extremely attractive black decoration; e.g. a black quadratic pattern, like a device in heraldry, reaching three parts up the smooth white piping, or a series of black lines dividing up the flattened round of the top to bottom compartments in some swelling urn-like vase. This reinforcement of construction by the use of black line is a Vienna speciality, whether in architectural or particular ornament. But at

this stage, artists like Peter Behrens have taken it up and carried it to lengths of development which reach beyond the technical limits of mere colour. The essays appended, whose theme is Line and Surface in relationship to Colour, will be concerned with these developments.

PART II

COLOUR AND LINE

THE translation of outline into lines is a very ancient feat of culture. Primeval man tried his hand at giving characteristic appearance by means of strokes. We wonder at the vividness of the animal drawing on bones which have been discovered ; or on the walls of rock in caves in the Dordogne, which date back to the Diluvial Period. The habit indicated, whether it was pursued by scratching upon bones, or chiselling into stone, or carving on wood, or setting down on paper, linen, silk, has been a concomitant of all human history. There is no material on which a pointed instrument of any kind has been found capable of leaving a mark that has not been used already to receive one. It seems so easy, almost an inborn faculty, to be able to draw. The simple means suggests an easy performance. But what difficulties the material presents, what labour and what sweat of the brow it often costs the man who would be an artist or pursue some industrial craft

which requires the use of the pencil, before he partially overcomes his clumsiness ! And even then his acquisition is only a degree of manual dexterity, disadvantageous often to his success as an artist, since it is something he has not really observed, that his excessive facility sets down. Line felt in all its meandering is really the highest thing that our artistic culture has risen to. Such line with soul in it can only be achieved by a great master after long-drawn-out struggle with the principles of form and colour. A conscious mastery is required for self expression with means so modest. It has been said that the brain and not the hand is the prime agent in a drawing. And only when this fact is appreciated is drawing realized to be the distinctive and intelligible touchstone of genuine artistic culture. It is only through line's being possessed of such infinite potentiality that the wonderful art of Japanese wood-cut printing has been evolved, and that the pen drawings of Leonardo da Vinci have been produced. It is astonishing what such masters as Rembrandt, Michael Angelo, Dürer, or Holbein have been able to accomplish with inspired drawing, how plastic their mere line can be, how light and shade can be given

and a whole body rise into vision only by the drawing of a contour. A few of their lines can rear up a whole universe of activity and emotion.

Every artist meanwhile has his own language in line, a way of drawing as distinctive to himself as his own handwriting. We tell this artist by the swing and rhythm of his contours, that one by the inter-relation of his lines, this other by the colour-suggestion of his strokes, the last by the distribution of dark and light in them; for in connexion with graphic art we have two chief tendencies to keep in mind—that reposing on the effect of the single line, and that on the joint effect of many—that in which the line is in itself the aim in representation, and that in which it is only the means by which forms, surfaces, or methods of illumination are represented. We grasp the distinction straight away when we see an exhibition of drawings by a variety of masters in a variety of periods. There is, e.g. the old man's head (Vienna) by Dürer (reproduced in the 'Museum'), a study for the figure of St. Jerome, in which all stress is laid on the colour-suggestion of the black and white, which are picturesquely balanced against one another. The lines in this drawing

are not there for their individual effectiveness, but for the effectiveness of the whole mass of them as against the white mass of the paper. Yet in drawings by still older German masters —Schongauer, Hans Baldung, Grien, and others —contour is everything, and single lines tell on their own account. Holbein is a 'line as means' man. In his rightly designated 'portrait-drawings' (for they are real expressions of full likeness by drawing pure and simple and illustrate the dictum 'self-limitation reveals the master') he is so sure of his picturesque effect, that a few of his strokes suffice to render a picture. We know the coloration by the few dark passages in them and by the slight shading through which the tenderness of the skin is revealed to us. We know the clearness of the eye and the colour of the hair by the relative dark and light of the contiguous strokes, and the form of the mouth out and out by an exceedingly fine contour. With Raphael, on the other hand, in his pen drawings, contour comes first and foremost. The shading is a comparatively perfunctory business and in places disturbs impression. Rembrandt on the contrary in his prints purposes a strong relief with lights and shadows.

He knows the means of black and white relief exhaustively. However distinguished and expressive his contours, they are yet subordinate to colour effect intended with the massing of his strokes. With Rubens in turn contour betokens the division between two striking colour tones. The drawing aims absolutely at picturesque effect, being frequently on grey paper and with white colour applied possibly to increase the picture quality. Watteau's drawings in red chalk are guided by the same principle: and other draughtsmen of the Rococo go still further in the abolition of contour. Like the contemporary painters they deal much in half-tones, in a grey, e.g. in which subdued white or an unsubstantial black is to be detected. The significance of line is still more suppressed by a technical device, through which every line is intersected by one crossing it, so that the drawing seems to have a fine net drawn over it, increasing the haziness of the impression. It is the etching that is here particularly in question: etching has its culmination in this period. At the beginning of the nineteenth century the chief stress with German draughtsmen is once again on the contour. Schwind and Ludwig Richter keep

it soft and rounded, while Rethel and Preller draw with more vigour and angularity. Berlin has its masters in black and white. There is Krüger in the fifties and somewhat later Adolph Menzel, both of whom tend to the harsh and characteristic in their line-work. The Munich school, and especially the widely known draughtsmen for ' Simplizissimus ' have also stressed the delineation of character in drawing and carried it to still further triumphs. Th. Th. Heine, Wilke, Gulbrannson, Diez have each an individual and expressive line quality with which the public is familiar. In the work of the whole school line is used both for itself and also in its relation to the surrounding space as in the art of the Far Eastern peoples, who not only fashion each separate line to a work of art and lay the expression in the contour, but keep their artistically felt lines in close relation to the surface to be filled, be it piece of paper or roll of silk. Whatever the lines are in form and in colour they have to subserve decoration. Our whole modern art has been stimulated by them. Aubrey Beardsly, whose distinctive, sensitive, almost morbidly fantastic line we have already appreciated, was chief intermediary. It is hard

to say what impresses one more with him, the fascinating charm of the line, or the subtle distribution of his spaces, got by relating his line persistently to the boundaries of his surface.

This relation of line to surface or rather to the surface of one's canvas depends on the artist's inborn sense, not noted by the beholder, but always in the mind of the artist while he labours, for the advantageous spacing of the representation of an object divested of one of its perspective qualities, its projection on the canvas. Some artists who do not design with this conscious attention to flatness, e.g., Hans von Marées in his soulful lines and harmonious contours, to which he attached supreme importance, achieve the extreme simplicity induced by the conscious process. But still purer and simpler is the relation in Puvis de Chavannes, in his decorative paintings in the Sorbonne, because with him the relation of the contours of his figures to the boundaries of his surface cannot possibly be overlooked. There is something of this in all great artists, but we have to come to modern painters for its really conscious development, and it is when we keep this firmly in mind that we appreciate the work

of Gauguin, van Gogh, Cézanne, Kandinsky, Nolde, and that of the modern Germans, Jaekel, Mackel, etc., who stand directly under their influence. Even the lively harmony of their colours would be inconceivable without the dark lines which contain them.

For illustration of these principles in decorative industry we do not need to go far. How often a wall, a curtain, or some piece of fancy-work, for all the beauty of its colour, gives an impression of insipidity! Only insert a dark contour between its elements and the strength of its colours is so heightened that their harmony is reconstituted. Bezold remarks, 'The chromatic advantages of contour are incalculable.' Or a flat ornament stands on another colour and tells too feebly against it. We have only to give it a dark contour to achieve the effect that was designed with it. To which Cornelius remarks, 'The principle of surface lines is the prevailing principle in decorative art in general—In accordance with which it can be said that the situation of the walls in a room and the relations of the spaces in a vaulted roof can only be made clear by surface lines corresponding. . . . The various divisions

in surfaces of walls which occur in artistic architecture from ancient times down to the Empire period, are so many illustrations of the application of this principle.' (Hans Cornelius, 'Elementar-gesetze der bildenden Kunst.') This use of contour, which has been practised in all periods in decoration, has only just now begun to come into its own again in painting, and this for two reasons: first, because, as already said so often, black or white contour increases the impression made by colours; and, second, because painting wishes to be once more, what it was in the time of Giotto—surface decoration. So long as a picture purports to represent space and solidity—to give, i.e. the illusion of actuality, it has no use for contours which have no place in actual existence. If on the other hand a picture sets out to light up a portion of a wall with a slice of life in all its intensity and monumental magnificence, it will find in contour a welcome assistant and ally, since the line conserves the relation to surface and gives the fanciful play of colour a stand on which to display itself. Beauty of colour and rhythm of line are inseparables—their association is indispensable

—if there is to be pictorial perfection. It is so with the Japanese: it is so with Puvis de Chavannes. In his work virtue is not only in the individual lines, but in their mutual relations and also in their relations to the edges of the painted surface. Only when they are composed with an eye on these is perfect rhythm of design attainable. A picture of Munch regarded from this standpoint is as admirable as the façade of a building by Messel, or a wrought-iron gate of the time of Louis XV. The three examples from such different realms and styles are chosen to show it is not the style nor the material in which the lines are executed that matters, but the disposition of the lines within the limits chosen. There is, of course, a fashion in line that has its importance, and every epoch has a way of executing its lines that give a title to the style connected with it. When the gracious rhythm of the Antique line had died away, the Gothic style developed out of the crabbed ornamentation of the Romanesque, and when Gothic in turn, through the excessive facility of its architects, had degenerated into fanciful prettinesses, the Renaissance revived afresh

the plain-arched fashion of construction of the Greeks. German decorative art specially proved then original. But soon these forms degenerated, this time by reason of over-modelling, into the baroque or over-violent. Taste then, requiring a reversal, shaped the dainty Rococo with its rich profusion of melodious fanciful lines—now recovering from undue depreciation—which recall the graces of the Greek world and support the fine colour arrangements of the time so efficiently. However, straight-up-and-down Empire soon ousted gracious curve again, and so the game goes on. We are issuing to-day from a straight-lined style, which had succeeded the so-called 'youthful style' (*Jugend-Stil*), and we exult afresh in the curved lines, joined to a hitherto undreamed-of richness in colour, which the young German and Viennese decorative artists are making. And in this art-endeavour the decisive factor is the way the line is fitted into the given space, and how it accords in form, strength, and colour with the composition of the whole. Thickness in line is not a matter of indifference. White lines on black look wider than they are, while black lines on white look the opposite:

so that it may easily be that a decoration in white line on a dark ground is over-insistent. The remedy is, of course, to thin the white line or make the background lighter. Too broad lines of black or white can also influence a mixed pattern of colours unfavourably.

As for optical illusions through lines, a transverse-striped quadrilateral appears higher than one marked vertically. You can make a wall seem higher by striping it horizontally. Clothes striped lengthways give a slender appearance. The phenomenon is that of straight lines on round forms. The eye is drawn in a horizontal direction in any case by the rounding, and is retained in it still further when the straight line follows the same course. It is drawn out of the horizontal naturally when the straight lines are in the vertical direction. In J. Bernstein's 'The Five Senses' the following illusions come in for mention: 'A number of circles or a row of concentric circles deceive the eye, so that we lose the impression of flat space and acquire that of modelling—something very like the feeling of looking in a hollow ball. If the circles are of more than a certain size the

strokes are no longer of equal thickness, but alternatively thicker and thinner. For most eyes two strongly defined sections make their appearance, though all sights do not agree in this.' The phenomenon is anyhow surprising and might be inconvenient in decoration. Black and white frocks of certain widths of stripe might dazzle.

Another kind of optical illusion is produced when a row of parallel horizontal lines are cut by oblique lines from the right and left alternately. These obliques, although parallels actually, are anything but parallels in appearance. The divergence could be experienced with a number of herring-bone stitches together. Two straight lines which are crossed in different directions look broken in the middle. The effect is conceivable in embroidery. There are indeed many more optical illusions by which unmeant mistakes could occur or by which mistakes could be corrected.

Plentiful information on the question is supplied in ' Raum-ästhetik aund geometrisch-optische Täuschungen,' by F. Lipps (Schriften der Gesellschaft für psychol. Forschung. Heft 9/10. Leipzig, 1897).

Modern industrial art has recognized what charming effects can be produced by fine black or white lines in needlework and embroidery on silk or on linen. The machine-embroideries from the workshops of Brauchitsch or Olga Schirlitz in Munich are exemplary. Here are lines disposed exactly according to the given surface, dividing up the space in good proportion mathematically, lines ordered in groups, lines standing in effective isolation, lines finer or stronger as the shape of the surface to be decorated or the colour requires them—for coloured lines must be considered in relation to the other colours. An orange-coloured line must be finer than a pink one: a yellow-green line will have a stronger effect than a blue of the same thickness on the same neutral background, apart from the contrast effect, which here can produce illusion. Merchants have complained, as Bezold tells us, that the stripes on the green silk ordered were violet instead of black. The complementary colour called forth had been so strong as to give black lines the appearance of being violet.

The colour effect of a thick line being thus different from that of a thin line, it

may very well be the case that just the strength of the lines or of the stripes is spoiling the colour effect of a pattern. In borders and coloured embroideries for clothes, which are often made nowadays with more or less taste by machinery, it is advisable to see that the treatment of the lines in the pattern is good and that these are well fitted to the space they occupy, just as much as to see that the colours are well assorted. A treatment of line that suits a wall decoration is of no use for dress material: one good for porcelain is not so for wall-paper: a pattern designed for a cushion will not appear to advantage on a table-cloth. Our once-aroused love of decorative quality asks to receive satisfaction from the objects of daily life. Our demand for the feeling of equilibrium, for that is the decisive factor here, is not content with the mere seeing of good colours, it must see them distributed in well balanced forms and spaces. And for this, as decorative artists in Vienna, and our great architects and arrangers of house interiors, such as Peter Behrens, Bruno Paul, Vandervelde, etc., have recognized, we need line. It is a great

recommendation of these Viennese artists that they satisfy this yearning for the feeling of equilibrium. By so doing they create something really organic: and their emphasizing of the characteristic spots by a dark contour is deduced from a correct comprehension of the most distinctive quality of line, its power of expressing the characteristic. And in this they are true to Nature, for everywhere where there is a strong contrast, where the most heterogeneous things collide or intersect, there originates for our eye, optically speaking, a line. 'All sight of contours,' says Marty, 'depends on the perception of differences in quality. It is really and truly the perception of frontiers, and the frontiers are perceived sharply in exactly the measure in which the things that produce them are strongly different.' Actually speaking, this line is not at all existent, for even the sharply defined branches and twigs of bare trees against winter snow are three-dimensional bodies, which only appear lines to our eyes set on the vision of that surface. We are accordingly quite justified in saying that in drawing we are creating something that has no existence in actuality: and however many

lines may have come out of the human mind already from the time when men first learnt to draw up to this present moment, the unexploited riches of the mind are still inexhaustible.

COLOUR AND SURFACE

THE subject is in the first place surface, which is marked by the characteristic that all its points lie in the same plane. It can therefore be compared with a wall and comes into consideration for modern decorative painting, for the artistic decoration of a wall, a ceiling, or a carpet : or for needlework in the form of covers, curtains, cushions, etc., for patterns of textiles, and for the ornamentation of articles of clothing and personal adornment ; in short, for anything that offers an even surface. We distinguish between limited and unlimited surface. We can regard surface in the former quality as a more or less framed-in picture : and the limits we impose by so regarding it, it is impossible to disregard. They give it, first of all, character. If we should be forced to define it, we should always begin ' it was a four-cornered wall,' or ' it was a round pane,' or ' it was an oval surface.' We realize,

then, the importance of the edge, or frame, or limit of whatever nature, and can conclude that we must bring every line, every pattern, every form, and every colour that occurs upon the surface, into relation to the surrounding frame. We shall take it as our standard when we wish to estimate the length of any line, the breadth of any ornament, or the roundness of any curve within the pattern to be represented. And then the observation will be forced upon us that the bounding lines influence the effect produced by any form within the surface. A long narrow quadrilateral appears less pointed on a limited quadrilateral surface than on a round one; a circle looks rounder when seen over against a quadrilateral than against a circle or an oval. A delicate line looks more delicate the more squat and ponderous the lines about it, and conversely, a strong line appears more forcible, the finer and daintier its environment. The phenomenon reminds us of that of the complementary colours, where a yellow line appears yellower the more violet is its background, and a red background appears more lurid the greener the frame about it (cf. General Survey, p. 17). That

contrast both emphasizes and alters expression we can observe at any time in Nature. Rounded tree-tops look rounder, the squarer the houses in their vicinity. A horizon looks more horizontal, the more broken the hills in the foreground. A cluster of rocks appears higher and steeper, the smaller the human beings at their foot. A steeple appears more pointed and soaring, the rounder and flatter the roofs and domes in its neighbourhood. Hence, too, the diminished impressiveness of the Gothic Cathedrals when in some cases the property surrounding them was improved out of existence. The blue sky, lastly, looks of a more greenish blue, the redder the autumn foliage above which it is descried.

In works of art also the strength of expression is enhanced by the use of these contrasts. The boundary lines of the picture surface, because they are such very prominent elements in it, have enormous weight with the painter. Cornelius in ' Elementary Laws of the Art of Painting,' says considerable on the subject. The influence of the bounding line must be so strong in the artist's mind, that the agreeable division of the surface it frames, must appear

to him the one thing needful: the filling itself is far secondary. Whether he will make the division through forms or through colours, however, depends upon the type of his genius. One artist will conceive through form, another through colour. The only important thing is that the filling should grow out of the boundary-lines. The first question must be 'How can I break up this surface agreeably?' There are quite definite feelings to be consulted in the division. But what feelings these are exactly, has exercised artists and art-philosophers from the beginning. And a final indisputable answer cannot be said to be forthcoming. Lipps says that the feelings that good pictures satisfy are unconscious, and Jakob Burkhard in his 'Recollections of Rubens' remarks that with powerful compositions of Rubens the beholder is conscious of a mysterious gratification of the eye, parallel to and apart from the appeal to his dramatic feelings, until it dawns on him that the separate elements of that symmetry that the artist has diligently concealed are reducible to a mathematical figure. The probabilities are accordingly that this gratification is connected with our

sense of equilibrium. We require a secure sense of stability. The feeling changed, to be sure, remarkably with change in period and in taste. We can discriminate the most varying tendencies. Some hold fast to the Golden Mean of the Renaissance, others affect the long-drawn-out slender forms of the Gothic, and among modern decorative artists some space out their surface into long narrow, and others into broad squat forms.

When we ponder the modes of decoration in the different ages we are surprised to find that the severest styles in the decoration of flat surfaces were the earliest. In Egyptian Art, e.g. there is no thought that does not relate directly to the space to be decorated. The example for us is excellent, although our feeling for form has changed so materially. Such strict relation of design to surface as the Egyptians practised, although it is so fundamental, has never been fully achieved since. All those naïve Egyptian artists standing before the tapering quadilaterals of their pylons or of the walls in their grave-chambers, were affected unconsciously by the unusual conformation of

those surfaces. Only on such trapeze-like four-edged surfaces could the distinctive Egyptian style have originated.

The Assyrian style is very similar, but favours the compact and the massive. Think of the already-mentioned friezes in coloured tilework (Munich, Glyptothek). Greek wall decoration grew out of the Egypto-Asiatic style initially, but acquired a lighter, more graceful line and a new way of dividing up its surfaces. The Greeks amended the proportions between length and breadth in a direction contributing to pleasurableness. They conventionalized less in their forms: rather they kept deliberately to Nature and they spaced their walls skilfully, with dainty vine-work or light architectural forms, and in pictorial composition involving human figure, did not forget to relate design to the trellis border, if not to the actual edges of the wall surface.

The rise of Christian art and decay of the antique sense of form brought a revolution in decoration. Feeling for a third dimension seemed to have decayed. The decoration of the flat wall was the task. Colour usurped the place of form. Byzantine art is noted

for lovely rich colour and great variety in the forms of surface ornament. Eastern and Western influences were blended in it. Stone and glass mosaic were the materials in which it worked and the colour-scale of blue and green was rich in consequence. The human figure was decoratively conceived. It was surrounded with a strong contour and the treatment was flat. A good subdivision of the walls was everything. Supreme illustrations of the style occur in the churches of Ravenna and in St. Mark's, Venice. They are the models for much modern glass painting and mosaic work. (D. P. Jessen: 'Lectures on Glass-painting.')

The peoples of the East have carried ornament in the flat to the highest artistic perfection. The Arabs, indeed, have never transcended it. They came under the influence of the flourishing art of decoration of the Persians, but because the lifelike representation of the human form was forbidden by their religion, were restricted to the geometrical or the conventionalized. Hence the purity with which flat surface ornament is cultivated among them.

Romanesque art blends a conventionalism

inspired by Arabian and Byzantine models with naturalistic form.

Already in Arabic art the spaces had suffered considerable dismemberment and part dissolution into round and pointed arches, and in Romanesque the dismemberment continued. Long drawn Gothic lines, pointed arches, and soaring pillars replaced the traditional, wide-ranging, and but little divided spaces. There was much less room now for ornament, which was restricted to the pointed spaces between the pillars or to the balustrade of the gallery. Only in Italy were walls and vaults preserved for decoration. The Byzantine style struck special root in Sienna—with the pictorial representation of scenes, to be sure, yet with the intention even now of filling a space with colour more than telling a pretty story. The technique of fresco painting was developed, and painting on a gold ground was engaged in in addition to the use of mosaic. But we have enlarged already on the extreme preciousness of these paintings from the aspect of the technology of colour.

The school culminates in Orcagna, who on the one hand subordinates his figures

entirely to the space he paints in, although he makes them lifelike, and on the other hand treats all factors in his subject as of uniform importance. He has no foreground or background, no hole or corner, in his picture: it is absolutely flat as a billiard table.

A Siennese picture by Traini, entitled 'Saint Thomas,' is given in 'The Museum.' The title figure stands out certainly by reason of its large dimensions: yet it is pinned in the one plane by the halo behind its head and the beams proceeding from it; and the other figures adhere to a semi-circle or to an oval. The corners of the picture are filled with star-ornaments, which render them equal in emphasis with the other parts of the picture. An enthroned 'Madonna' by Taddeo Gaddi (Museum) is fitted with scrupulous exactness into its panel. Every gesture has its counterpart, every element in its composition is balanced by a companion element and brought exactly into symmetry. The supports of the throne and the angels attendant are mutually correspondent. With the assistance of this symmetry there is not a gap in the surface left untreated.

But the traditional forms become threadbare. The demand for representation becomes vocal and genius is equal to the occasion. Giotto di Bondone makes the innovation that is connected with his name. Decoration of a surface is no longer enough: a story must be depicted: and the way the problem is solved is really magnificent. Giotto does not dispense with the firm framing: he emphasizes it if anything: he furnishes his wall space with an ornamental frieze contrived out of Byzantine, Gothic, and the incoming classic motives, breaking his surface ingeniously by their means, and he puts his figure composition into the right-angled, or round-topped, or painted-topped compartments he engineers so brightly and so pleasantly. And though his scenes are so expressive and his characterization is so sensitive, they are all laid exactly within the contour and the flatness of the composition is not imperilled: the relationship to the frame is never lost sight of, nor the need of harmonious spacing. That the figures are distinctly contoured and only slightly modelled is both the solution

of the problem and an assistance to characterization.

The strongly modelled pictorial portrayal of the Renaissance, with its renunciation of line, is no advance from our standpoint. The strength of the period lies in another direction. Its architecture, however, has done great things in the contrivance of surfaces and in their artistic division. In the noblest structures quite definite proportions were observed. The smaller part in a division was related to the larger, as the larger to the whole, in accordance with the Classical principle of the Golden Mean. These were the right proportions for beauty, whether applied to the division of a line or of a surface: the ratios 3 : 5 and 5 : 8 are, roughly speaking, the desirable ones. Raphael used these in his indoor architecture. There is a staircase by him in the Vatican that is a masterpiece on these lines. In the Renaissance the pure decoration of surface declined to a mere frame of the actual picture. Even when the ceilings are well proportioned, the many circular spaces with figures contained in them looked like apertures in the surface: they gave the impression of peeps into a

remote distance, into heaven, say, or into Olympus. It was deliberate design with the Renaissance to disintegrate surface. Nevertheless the period developed a beautiful and uncommonly rich system of ornamentation comprising fruits, garlands of flowers, and the so-called arabesques and grotesques, which were shapes of griffins or of lions, tailing off into fanciful line-work.

More open to objection were the forms which the early Baroque either cut out of the surface or raised above it, in imitation of metal objects. Nevertheless there was great enrichment of the resources of ornamentation, especially in the sixteenth and seventeenth century tapestries and wall-papers. This was mostly in heavy squat forms, which fitted the magnificently splendid style of construction and the handsome size of the walls that were built under Louis XIV.

The Rococo, which was the style of the Regency and of Louis XV, meant an entire change in taste. It was inspired partly by the percolation of Chinese, Japanese, and Persian ideas of decoration, and was at first a graceful jumble of trellis work and of

fantastic forms from these sources. It reached its zenith through artists like Watteau and Bol, and by its absorption of ancient Greek ideas on the subject of spacing, derived from the excavations at Pompeii. The antique impressed itself later even in subject. It makes what is called the Style of Louis XVI, which is found in its highest perfection in the castle at Versailles.

The Empire reverted to the large wall and subdivided it on strictly rectilinear principles. Until the decorative movement set in, the nineteenth century proper was barren of good wall-decoration. The sense for it was lost, and only in our time, practically, has the art of beautifying the living-room been revived. Painting, which had lost its connection with surface and with architecture, and had struck out for itself in the invention of the easel picture, is now seeking afresh the association it had in Giotto's time with architecture. The days are past when collectors add picture to picture in private galleries and immerse themselves in loving contemplation of their treasures. Pictures are no longer wanted: the demand is for beautifully-ornamented, well-spaced

surfaces. And the strange thing is how well this demand of the day falls in with the tendency among the painters. The chance slice from Nature's unbounded provision, such as the Impressionists extolled as the proper subject for depiction, no longer satisfies its erstwhile trumpeter. Our impressionist asks for scientific organization of his picture, and for restoration of the once valued, but since lost, relation of picture to shape of surface, and even to the quality of its frame. It is this fact that will lead him to healthful contact with architecture again.

Masters like Hodler, Munch, Matisse are prophetic of the tendency. Their compositions are not for mere detail by detail appraisement: they aim at a general effect in which every stroke and every tone is mutual in relationship and contrived also with an eye to the surface about it. In Hodlers 'Day' e.g. the frame is part and parcel of the picture. Five figures are enclosed in a very confined space. Ascending day, the middle one, appears to bear up the frame with head and hands, creating freedom, as it were, for the yet sleepy women at each side whom he has

brought on to their feet with him by his energy. With their severe contours all three form one symmetrical figure, within which, in spite of its compactness, there is felt to be the greatest conceivable internal commotion. The two edge figures leaning limply against the frame, mount in uncertain gloom up out of the realm of earth still involved in night. They too are strictly symmetrical, in spite of the extreme sluggishness in their limbs. This station of the figures side by side and repetition of the same feeling is extremely impressive. The frescoes of Giotto, which build in their ruling idea into the picture with like relation to surrounding, or rather rank its different expressions side by side, on one plane, in the same way as here with Hodler, have an impressiveness of the same nature.

If Hodler, the Swiss, goes to early Italy for suggestion, the Norwegian, Munch, takes the Japanese as his masters in the subdivision of a surface. He is the last word in the matter of effective spacing. He is a virtuoso, moreover, in the expressive rendering of character, without carrying things to the extreme of caricature. Caricature not only exaggerates

but uses disproportioned division of its space as a means of creating astonishment. Munch never allows himself this licence. In his already-cited picture, 'The Bridge,' we see a straggling highway by a moat: in front, the bridge: red-clad children by its coping: behind, trees and dark houses in a group, all mirrored in the water. The form, everywhere, is extremely simple; the expressions are in the contours: the bodies are flatly treated: perspective is only admitted in a degree that does not spoil the favourable division of his surface: the colour-effects are confined practically to three—the light one, of the moonlit, greenish sky; the dark one, of the trees and houses in silhouette; and the near one, of the red on the children. Decorative wall-pictures are indeed his speciality, and unless these and his portraits are seen, his eminence cannot be adequately appreciated. In the portraits, too, the expression must not be looked for in the sitter's features or form alone, but quite to a large degree in his relation to the space and in his attitude to his environment. The portrait with Hodler is not a human form, before some sort of back-

ground, but a composition, in which every inch is of moment, in which every stroke, form, colour, is relative to every other, and also to the materials with which it is fabricated.

The Frenchman, Henri Matisse, works on these principles; not so dazzlingly, it may be, but even more logically and pedantically. He gets his effects with absurdly simple means, with almost mathematical precision. He gives really and truly the flat surface, without any compromise. Everybody knows him. His 'Panneau,' a still-life picture (in private hands), may not be so interesting as his figure paintings, but is in at least two points more instructive: (1) in the great charm in its colour; (2) in its thorough solution of the problem of rendering a perspective scene flatly. In the middle of the plain, brown-painted room is a table with a table-cover, on which there is yellow and red pattern. A grey vase, a sculpture, and a white plate with intensely green pears on it, more or less in a group, and some violet aubergines occupy the table-top. Behind is a folding-screen with great white pattern-shapes on green. And behind that is a

half-seen door-opening giving access to an adjoining chamber, the walls of which are painted pink. The view from the open window of this chamber shows an intensely coloured medley of green hillside, red highway, brown distance, gleaming sky, and what not?—framed in by the bright pink cross-bar of the window. A looking-glass, left, repeats the colours of the table in epitome, and the dark blue stove-opening below provides strong contrast to the multifarious brightness of the picture. Noteworthy, however, are the large blue flowers distributed over the lower half of the picture. It was not proposed originally to set them in the dark background of the floor. But it so proved that the spacing out of the colour 'spots' was not sufficient to give good balance. The brown of the floor proved too heavy for the other colour-masses and needed to be advanced somewhat in the picture. This was accomplished by the insertion of the blue flowers. The repetition of the same colour then in the frame, in rich combination with yellow, enhances its importance as colour and reinforces its effectiveness in competition with the other strong colours of

the picture. All sections of the picture are now of equal value. The whole surface is equally near to us. The whole is a surface without gap, a veritable tapestry in its impression.

These three masters and their numerous pupils are not peculiar in working on this principle. Practically the whole of the youth in the studios of to-day is showing the same general tendency. Some derive their impulse from Puvis de Chavannes, others from Cézanne, others from Gauguin or from van Gogh, others from Hans von Marées, or from El Greco. There is no one of these but can be considered a pioneer in the movement. Think of the Haiti motives of Gauguin (Neue Staats-Galerie, Munich), the naive flat painting and colour brightness of which are set off by the dark curtain. It is noteworthy how contour is here used with distinct reminiscence of Giotto, as the means of securing relation of the elements supplied with it, to surface. Hans von Marées tried much earlier, and in a way more sympathetic to the Germanic disposition, to achieve the same object.

Erler works with large flatly-rendered human

figures. His decorations in the Assembly Rooms at Wiesbaden are of impressive power and particularly striking for their colouring. A bright, lustreless yellow, joined with grey-black, recurs again and again. There are, e.g. cliffs of this yellow, washed by a black-grey sea, towering up into a reddish, bright grey sky. An old man in a violet cloak and a child with some bright shreds of draping, in a green meadow in the foreground, give colour-contrast. The other decorations in the same hall are on the same lines. 'The Driving out of Winter,' 'The Entry of Autumn,' etc., have variations of the same yellow and grey colour-scheme with similar bright spots of contrast. There is no doubt that this all remains in the one plane, the more so that the grey of the walls is carried into the composition. Ostwald was doubtless thinking of this sort of effect when he remarked in his 'Harmonious Colouring' that good flat decorations of surfaces can be got by the combination of pure tints in low tone (see p. 5). Schmid-Reutte's successor, Waldschmidt, has a fine way in the use of the figure for decoration. He keeps

his colour in narrower limits, however, than Erler.

Schmid-Reutte's early death is a calamity. 'If there is to be a monumental wall-painting by Germans, the way to it lies past Schmid-Reutte.' So said Ludwig Habig. His power of drawing makes even Hodler's composition look thin. Klimt's most characteristic gift is for decoration. He exhibits it in that combination of Beardslyian nerviness and world-old Byzantine-Russian devotion and enslavement to pure decoration that is particularly associated with his name, and that was only possible in Vienna.

The many attempts of the Cubists, Futurists, and Expressionists point to the clear goal so far as colouring is concerned. Kandinsky may immolate every hitherto accepted principle, and Nolde and Schmidt-Rottluff divine mystic chords and combinations and seek to draw the beholder, whose look is set on the ordinary and approximate, away to dim distances and unmeasurable altitudes. Their imitators' uncertainty in form and colour is still more noticeable: their often exquisite individual performances exhibit no firm relation to the surface. This school drifts quite away from

the attractive goal of creating a strong school of Decorative Art in Germany: and new German Architecture, with its acknowledged merits, after being won over at last to the provision of wall-space adapted to decoration, looks in vain to the sister art of Painting for a supply of original decorators. 'Attempts' is the best name you can give to the most recent output of our art students. The crudity of the colours in the Exhibition of Industrial Art in 1922 was appalling. It was a relief to the eye to gaze on the tasteful but somewhat hackneyed exhibits in the room allotted to Vienna. Most of the younger artists who have any name at all, such as Pechstein, Purrmann, Macke, Hofer, Schülein, Caspar-Filser, etc., were producing precious colour-inspirations on that small scale alone that the money-tightness of the present period permits of.

German technical industry, however, even before the war, was outrivalling all competitors. In it to-day we see the old firm-grounded laws of spacing and space-filling observed and mastered still more thoroughly. Take the carpet-making industry, for example. The essential thing in a carpet is the evenness of its

surface. It must arouse the feeling in the walker's mind, that one point in it lies near the other. The pattern must not project above the floor surface. We must therefore put none but forms and colours of equal tone-value side by side with one another. It is the secret of the Oriental carpet. Or if we put coloured figures on uniformly different-coloured background, we must make the figures balance the ground in the total weight of their impression. If they are figures, they must be more heavily outlined and more strikingly coloured in proportion to their smallness. If they are big, both colour and design must be more lightly given, or the background will be nullified. If the pattern is tightly composed, it must be correspondingly lighter. And here the question of colour comes in. Properly speaking it contributes form. By its aid we bring this into one plane: for which purpose we must know what colours lie in one plane together, i.e., which colours give us a pleasant sense that they belong to one another, get on together amicably, do not interfere with one-another's working, do not assert themselves to the other's disadvantage. Year-long practice sharpens an inborn sense of those things in the

painter. Other means assist the amateur: e.g., 'Kreutzer's Colour Table' for the selection of tints that harmonize, the employment of which was explained in the preliminary survey.

For wall-decoration the following points call for attention. When pure complementary colours are placed together the cold colours act too much as the shadows of the warm, so that in equal quantities they give no flat effect: the combination of pure complementaries, moreover, is violent to our preceptions.

The colour disc, as arranged by Brücke (as was mentioned before), is more harmonious in the combination of complementaries through the greater extension of the green section. It is advisable for better comparison of the complementary pair to cover the rest of the disc with white paper: and in some cases it is advisable to modify the effect still further, by choosing, say, the colours weak in light, like blue or violet, in place of the strong reds or their adjacent yellows. About light yellow, Bezold remarks on the contrary: 'A little amount of blue, i.e. of a very dark blue, is sufficient to localize a great deal of yellow, i.e. of very bright yellow'; and in another passage 'Mineral blue in

moderately thick application and dark jacine brilland in quite thin layer on white paper are complementary.' It is plain, therefore, that light yellow requires different handling from that of other colours (cf. ' Yellow,' p. 85).

The user of the disc arranged by Kreutzer can also get finer effects, if he turns the inner circle back two degrees, so that yellow, e.g. comes together with purple-red. This position of the disc offers the possibility of finding a third suitable colour in addition. You have, e.g. yellow-green in the inner circle and opposite to carmine red in the outer. If now you look for the place where yellow-green lies in the outer circle, you find ultramarine over against it in the inner. The three colours, ultramarine, yellow-green, and carmine can give a good combination; or blue-violet, purple-red, and turquoise-blue the same, and so on. These are all bright effective combinations, with which the user's good taste can be trusted to weaken this tone or that tone, and employ weaker or stronger shades to liking.

With the Brücke disc you can discover these same triads very simply. You combine three colours of the disc each time by means of an equilateral triangle.

As for the combination of two colours of equal value, there is little information to be had. Kreutzer gives on his plate a method of finding them, but it cannot be said to be satisfactory.

The effect might be quite harsh in cases. So many colours of unequal value, i.e. of different luminosity, come together on his system that the flatness of design might easily be disturbed. Rood himself is sceptical about the method. It is safer, at any rate, to introduce harmonious combinations only into a triad, i.e. transition tones or subdued blends of colour.

Still further the brighter and darker tones of the pure colours must be considered. Their brightening by admixture of white, and their darkening by admixture of black soften down differences and, incidentally, the interesting and dangerous oppositions. From these colours alone no interesting combinations can be made, not even if bright green is used as third colour. Yet it remains harmonious in itself, the more the contrasts vanish, just as among the dark shades, dark red, dark blue, and dark green go together. The tones approaching grey can stead the painter particularly: likewise a pair of complementaries

or a triad in the proper scant proportions, as we often find in the best products of the Vienna factories.

Very dark and very light never go together in equal quantities, not even in deliberate contrast. This can never look flat. A hole is always suggested. (See General Survey, p. 25). Ostwald implies this when he concludes in his 'Colour Harmony': 'The colour discs with equal content of black and white are of the greatest importance. They present the closest connexion that can exist between colours of different shades, and therefore permit of almost every possible combination. This is specially the case in the disc with least pure colour. The colours of such composition are the very best means for the decoration of flat surfaces, whose unbroken character is to be emphasized, and whose separate elements should not seem either to approach or to retreat from the beholder.' His colour atlas, as remarked, serves the industrial artist or art operative as a reference work for the possible combinations of colours for his purposes. Into this question of combining contrast colours in particular proportions only, he hardly enters.

Nevertheless, the possibilities of producing

flat effects out of luminous colours also are quite considerable. If one will examine preparations in polarized light beneath the microscope, or thin sulphate of calcium plates under the Schistoscope, one will be astonished at the unlimited play of colour. There are fine suggestions here for the painter, and by different focusing it will be possible to attain different intensities of colour and determine exactly what colours correspond under this intensified light and what bright colours therefore, appear in one plane together.

The combination of mixed colours, such as yellow-brown, red-brown, grey-green, etc., which often serve as background in needle-work remains still to be mentioned. What has already been said (p. 17), viz., that decoration must be harmonious with the background; that it must be cold in tone if grey predominates behind, warm in tone if brown is in the ascendant, must be repeated. It is mistaken to look for contrast between colour and background. The contrast effect must lie in the coloured embellishment itself: to give the harmonious accord is the proper work of the background.

It is time now to apply those theoretical

considerations to practice. We understand now what is meant, when it is said of the weaving of carpets, that with colours of equal value good effects come from equal proportioning. In the magnificent Eastern genres, in which many colours of varying luminosity are used, a larger mass of less luminous colour is used to a smaller mass of the more brilliant (Cf. General Survey—the Law of Equivalence of Alfred Lehmann). The law was operant in Drawing. The stronger, the fewer: the more delicate, the greater number. It was possible there to introduce heavy, intensely coloured forms on a light background, provided they were just a few in a great flat surface: just as it is good style to imprint a sharply defined monogram or book mark upon a binding of soft coloured leather, or place a tiny black blob on a white-coloured vase, as is done in the workshops of Vienna. I know there are extremes, almost ultra-refinements. In carpets, especially in big ones, in which the borders are not able to be visualized, so that it is an unlimited space that is in question, equally distributed colours and patterns are better. Fantastic designing for the particular shaped surface is in order for

small carpets, or for table-covers, or for curtains, provided always that the impression of flatness is maintained. Strongly marked patterns adjusted to the shape are good in curtains: but the fact that they hang up must not be forgotten and the heavier forms —which is equivalent to saying 'the heavier colours,' for we are dealing with forms expressed by colour—must be placed lower down. For the ornamentation of table-covers the shape of the table must be the determinant: with round tables the ornament is better rounded, with rectangular ones it is better cornered. Just now it is the fashion to cover the whole table surface with pattern and to leave the edge of the cloth, so far as design is concerned, untreated. This is, to my mind, not very tasteful. It offends against the law of balance, which requires that the weight, which is, in this case the decorated border, should be at the bottom. Old custom, which required a slight embellishment for the centre and crowded the edge with strong pattern and colour, or which filled out the whole surface with design like a carpet, is this time more logical. A rug-like division of the space with distributed

pattern is in like manner the best for cushions.

Friezes and borders are, by the logic of the case, limited surfaces, along which the eye travels. From these, therefore, rows of round or concentric figures are to be excluded. Oval shapes would be still worse. The effect would be too dreary; or, if the eye were allowed to travel forward as it wanted to, it would see them cog into one another or do other funny things, which would be worrying. The meandering line of the Greeks, or rolling and unrolling spiral, is the simplest motive for such a frieze. The Renaissance was very ingenious with such spirals. Modern industry is very often stiff with its over-geometrical forms: it achieves mere wooden juxtaposition both in form and colour. Viennese decoration, going direct to Nature for suggestion, is an exception: it gives a sense of flowing water, or of the mirroring of rays of light, or of some sort of wreathing or branching or intertwining such as Nature sometimes presents, when she opens one path and closes all others to motion. Neither does Viennese decoration stick its colours just next to one another rigidly, but interweaves them harmoniously. The friezes

on walls and the borders on vestures are like overtures in operas, in that many motives are just hinted lightly and then played with brightly in their textures.

Furniture or dress materials especially count as unlimited surfaces. We require with these more than ever forms and colours divided equally in value. Too grotesque designs are impossible as a matter of course. The earlier products of the Vienna factories were almost perfection in this respect. They observed the requirement of flatness, in form and colour, using mostly a complementary pair of colours or a triad applied sparingly to a background in harmony, either of low tones of neutral, grey or brown or of a blend of colours out of the more subdued colour circles. The silks especially are an inexhaustible feast for the eyes. For furnishings and decorative materials many a hint was taken from the French 'verdure' materials of the fifteenth century. There was then still greater dilution, with no need of any definite edge line at all, i.e. with a really unlimited surface. Small, more or less thickly strewn forms, in colour, on a light-toned ground, will always preserve the character of the unlimited surface, like the

starry sky or the flower-strewn meadow. Recently, especially in the new schools of industrial art, there have been fresh motives for decorative-materials. Many were on view in the show of these things at Munich in 1922. In this direction Expressionism has proved creative. Its freedom from rigid form and from traditional colour, which are a pitfall in connexion with limited spaces, are here an advantage. Its motives, with their often graceful fancies or Chinese bizarreries, are often astonishingly akin to those of the prolific Rococo, whose forms, with a little adaptation to modern ways of feeling, after undue disparagement, are coming into their own again.

After what has just been said, we appreciate the importance of the difference between limited and unlimited surfaces for treatment. Where in the limited surface every form returns back upon itself; stands exactly in its place, from which is not to be shifted, without harm to the whole composition; is fashioned of one definite tone standing in contrast to some other, in the unlimited surface there is offered a partial renunciation of form, a toning down of the contrasts of colours, an enhanced

tremulosity and impression of movement, which is heightened in the continuing 'non-stop' quality of the frieze.

We pass now to the relation of colour to three-dimensional form, and we shall see that it is liable, when so applied, to a multitude of changes.

COLOUR IN SPACE

IN the coloured adornment of the solid object, our first inquiry is as to the properties of the solid. And for this, as in the case of surface, we go into the question of boundaries and we find that these are not only to be sought in contour. Depth must be taken into consideration, and planes of surface now play the rôle that with surface was played by contour. The solid body consists of a number of surfaces so fitted together that they are not in the same plane, but at all sorts of obtuse, or right, or acute, angles to each other. If the planes impinge at right angles, as in cupboards, tables, boxes, etc., the already discussed principles of decoration will suffice for the colouring and spacing. The problem of the adornment of round objects is, however, more difficult. By the term 'round' here is meant 'plastic.' There must be possession of a definite form, marked by perspective qualities, and productive of light and shade. The most plastic thing of all is a sphere,

between which and the right-cornered object the variation in forms is immeasurable.

Sculpture proper is outside of our discussion and I am only going to touch lightly on plastic objects in colour. That the Ancients portrayed figured objects in polychrome is well known. It is known, too, that in the case of reliefs the background was always blue and that colour had a considerable place on the modelled figure also. It is hard, however, to get a reliable impression of the effect. We have constructed for long enough in our minds a conception of the natural material used in sculpture, be it white, gleaming, Carrara marble, or darker, more tobacco-coloured marble from Egypt. We delight in the colour of grey stone from the Peloponnese, and we explore the smoothness of black basalt with marble. Fine-grained grey sandstone is a delight, that lends a fuller satisfaction to our wonder at Renaissance or Gothic masterpieces. Think only of Strasburg Cathedral—of the joyous gleam of its red sandstone in bright sunlight, and of its grey and threatening appearance under a dark cloudy sky. The colour of stone is very expressive. We may fail to recognize a work of art which we know

in one material, if it is presented to us in another. It is as important in sculpture as it is in art industry that the possibilities of material should be properly comprehended. A work of art intended for bronze should not be reproduced in marble, and a piece of wood-carving should not be painted as sandstone, as has happened, unfortunately, to the lovely praying Madonna in the Germanic Museum in Nürnberg. Forms and colours that are good for metal are impossible in wood, things effective in faïence are bad in porcelain. The colour of the material itself is very important here, as it is unbelievable how different an effect the same colour produces in different material. Think how different a colour turns out in silk and in wool, how absolutely different it is in smooth polished stone and in dull whitewash. Too little attention is given to these phenomena. It cannot be stated too often and too emphatically that embellishments and colours which are proper for one object cannot be transferred to another without adaptation.

If an impression of length and slenderness is desired, design must follow the length of the object. If one of roundness is sought, round

motives must be used, or the most fully modelled portion must be the most pronounced in form and colour. And if under these conditions the design is still subject to the conditions of spacing already adduced, the colour will be affected by the play of dark and light upon the plastic object. In vases, cups, glasses, etc., there are always one or two gleam-spots at the points with the greatest prominence: and the colour there is pretty well effaced and replaced by a greenish, bluish, or reddish white. In shadow, however, the tint is darkened. The local tone is occasionally in the case of very highly polished vessels limited to a few stripes, so that one is probably astonished to see how differently a combination one has beheld on a surface comes out on a solid object. Light and shadow, it is to be remembered, alter the whole effect and can even cancel it. One may wish to trim a hat with a combination—say, of bright blue, with yellow-green and black in small quantities—which looks very well on the flat surface. Put the blue and black above and the yellow-green beneath the brim and the hat will lose its form, because the bright element occurs where there should logically be shadow. Put the black

now beneath the brim and the blue and yellow-green above and the effect will be frightful: the blue is so changed in the light that the yellow-green will not contrast with it. The blue below, however, makes a lovely gleaming depth for the black and yellow-green above. Light and shade are seen here to play a great rôle in colour composition, even though, generally speaking, in lighting that is not too glaring, there is a certain regularity in the action of colour which Hering calls the 'Law of the Approximate Colour-fixity of Objects,' saying that through certain adaptations in the eye the continual changes of lighting up to a certain degree are rendered harmless: that it is possible, therefore, that outward objects can preserve an unaltered appearance within certain limits of change in the illumination to which they are subjected, white objects remaining white; grey, grey; black, black: that although black letters on white paper are three times more strongly lighted at midday than the white paper itself in the early morning, the letters appear black to the eye and the paper white in both sorts of illumination: that if the brightness of the paper and the darkness of the letters were not independent

of the strength of their illumination within wide limits, the letters that look black in the early morning would look far whiter at midday than the paper appeared in the morning; or conversely the white paper under morning conditions would have had to look much blacker than the letters themselves at midday.

It is therefore very important to attend to illumination, whether you are exhibiting a work of art or inserting a piece of ornamentation in colour. How often the best works fail to produce their proper effect, because they are in a bad light! When one reflects, moreover, that a round form looks rounder by the side of a slender one, that a die seems to have extra corners when seen in proximity to a bullet, one sees why things that are quite lovely when seen singly can make a disagreeable joint impression. Naturally this is equally the case with colours. People often express surprise when a choice colour of considerable luminosity suddenly looks grimy in a new environment. It may may be due to the mutual influence of the colours, yet this may not be the whole explanation of the deterioration. Shape and form may have something to do with it.

We can infer from an utterance of Kandinsky's that form can exert a powerful influence on colour :—' Many colours are strengthened and many weakened in their telling-power by particular forms in which they are presented. Sharp colours (i.e., bright ones) have affinity with sharp forms, and in these are more resonant in their quality (yellow, e.g., in a triangle). The colours inclined to ponderousness are intensified by round forms in their idiosyncrasy (Blue, e.g., by enclosure in a circle).'

One step further lands us in the relation of solid objects to the space surrounding them—a relation of enormous import in everyday existence. We can pretty well say that the solid object is the positive form and the enclosing space the negative : that they represent respectively the molten metal and the mould. In one case the body builds its own mould, in another it accommodates itself to it. For purposes of decoration, now, it is not a matter of indifference whether the space is there to be beautified, or whether it exists to show off a body. These are questions of great import, both particularly and generally, by which we are affected

daily. You may have a bunch of round, bright-hued flowers, cut off close to the heads, and you may stick them in a long slender vase, for want of a low and wide one: or you may want to buy a particular picture because it appeals to you, but realize that it does not go with the colour of your wall-paper, and so buy one that appeals less but goes better with its destined surroundings. These are things that happen daily and bring out the want of accord between space and body in its tragi-comic aspect. When we regard the matter in its more general and more public bearings, when, e.g., in many public exhibitions only those works get hung which match the colour of a wallpaper, we see that it possesses a serious side; for in the case in question we do not get what we want: we want to see good pictures and not merely an effectively decorated showroom. Utitz appreciated the existence of the problem when he wrote: 'Exhibition rooms should not have such colours as might enter into competition with exhibits.'

In museums of industrial art both conceptions are to be encountered, the first tending to regard objects individually and

to give each its chance of impressing, the second tending to subordinate the interests of the individual exhibits to the requirements of a pleasurable total impression. There is something to be said for both conceptions. Some objects stand best on their own bottom: some gain by being grouped with others. There is a hint here for the window-dresser.

A show-window may be regarded as a room of the simplest order, one that is that has to produce an artistic effect as seen from one side only. It has to be looked at like a picture, or a flat surface, although the objects are capable of being placed behind one another. A good decorator will, however, not willingly dispose things anyhow, but observe approximately exact planes in his arrangement, like the fore-, middle- and backgrounds on the stage, though two planes will probably suffice, if the window is not deep. A tool-window, such as was on view once in a window-dressing exhibition, will afford a good example. On a wall covered with dull-grey canvas were dark-grey steel instruments arranged in patterns: in the centre, shining circular saws were

placed one over another in a rosette, and all spaces elsewhere were filled with tools in geometrical or architectural figures, the forms of separate tools, such as files or borers, cleverly used to enliven the general design, and standing out as well very boldly with their dark steel-colour from the light grey of the background. Below on the same partition was a show of somewhat more massive-looking tin implements that made an effective base, at once pleasing in colour and solid, while a row of gracefully-designed electric fittings gave the sky-lines of the structure. All this constituted the second plane only, the first being made with separate goodly-sized machines, on a black and white stone floor. These told very well decoratively through the impression they gave of massiveness, and yet they did not shut out the graceful background. Generality was skilfully opposed to individuality. By clever massing, out of the intrinsically uninteresting shapes of files, drills, and saws, an interesting colour-picture had been made, and at the same time effective relief contrived for the machines, which merited

separate attention for their interest. The principle here involved can be applied to the exhibition of any other class of article. Gloves, stockings, neckties, may be massed as a useful colour-contrast to articles of toilet ware of greater value and more individual interest: or they may themselves be thrown into prominence by an advantageous setting of coloured articles, a complementary colour, or a triad of colours introducing subtle harmony into a miscellaneous background.

One can cling to the principle of pictorial effect, or of emphasizing one chief point in colour and form within the frame of the window, even when nothing but articles of equal worth, such as books, are to be exhibited. In this case the more the arrangement keeps in mind the outer frame given by the window, and the better it turns to account and carefully divides up the window space, the more effective will be the result. The best performances in this genre are those of the recognized mistress of window-dressing, E. v. Hahn-Stephanie, one or two of whose windows we will use in illustration. In the first example there

was built into the main show-window a small stage with a kind of proscenium of black Japanese lacquer. On this stage hats were exposed to view, each for its individual charm, but each joined to its neighbours by a link of colour formed of chains, ribbons, or veiling. A hat that was the keynote in colour to the whole stood out by special lighting, while other hats were kept within a scheme which made the window as a whole a picture. A vase with flowers standing in front of the lacquer stage gave in combination and greater strength, once over again, the colours of the delicate-toned hat picture. Another window, exhibiting warehouse goods, had a graceful sewing-basket as centre, out of which strands of coloured silk and yarn welled forth, forming an effective contrast to the darker background. Brightly-coloured white rugs and covers of every shape and size, set out just as they happened to lie, on striped partitions in colours, framed it round. The floor held embroidered cushions arranged ring-wise to good advantage around the centre-piece. Space forbids our giving any more of the fascinating creations of this mistress of

her *métier*. The important thing is that she has shown how to apply the eternal principles of plastic art to the embellishment of everyday life: or, more abstractly stated, shown how everywhere, for flat surface or for space in three dimensions, the requirements of picturesqueness are unchanging.

Shop-window and dramatic stage agree in being viewed from one side only. And in the theatre the custom is dying out of giving deep artificially-contrived perspectives. These, in spite of elaborate shortened wings and other flummery, never did create the illusion of actuality, and are replaced to-day by less ambitious, more solidly-constructed actual objects from the world of indoor and outdoor Nature. One sees, e.g., one corner of a magnificent palace, or one tree with a suggestion of wide vista beside it, instead of the perspective representation of the trunks of half a forest; or a rock in front of a drop scene on which sky and sea are represented. A tent filling up part of the stage and affording an intermittent view of distant heavens as the flap is lifted or falls back in place again, is a further advance —a kind of dynamic advance—in fitting

scenery to a given picture-frame. A hill planted with gorse and brushwood and concealing an extensive battle-field is another advance in the same direction. We hear the noise of battle and we gather from the reddened sky that horrors are being perpetrated beyond the range of our vision, but all we see of the fight is a detail or two, either on or in front of the described eminence. Or we may be given the gloomy portal of an ancient castle and the drawbridge over a dismal dark-watered moat. The ponderous iron gate-wings are flung back as we watch, and give sight of a harrowing red-illumined approach. How much more impressive this is than when by triumphs of perspective skill half a castle is pretended to be shown to us! These conceptions, which the genius of Gordon Craig, the actor and painter, and pupil of Beardsly, invented, were realized by Reinhardt, even before the War, with practical perfection, in the German Theatre in Berlin, and in pageants and private performances.

And since that time the art of staging has been in a state of continuous development. Scenes of beauty and of powerful

impressiveness in colour and in form have been retailed to us successively. First it was Ernst Stern who fascinated us with the bizarre caprices of his richly inventive genius. Then came Erich Thum's stage pictures to 'Euryanthe,' or those of Burkhard of Karlsruhe to 'Turandot'; and, above all, Pasetti's new stagings at the National Theatre in Munich. Who was not thrilled by the weight and gloom of the dark prison walls in 'Fidelio,' or fascinated by the green sunlit lawn between soaring giants of the forest in the second act of 'Siegfried'? Who did not utter an 'Ah!' of astonishment at sight of the dream of colour in Pfitzner's 'Rose from the Garden of Love'? In all these stagings the eye's demand for effective picture was abundantly gratified. It is open to doubt, perhaps, if the dazzling and nerve-racking effect of the variegated lights with which in the main these stage triumphs were produced is a legitimate effect of the pictorial. Significant it is, incidentally, that scenery in stage *argot* is 'stage-picture,' just as a journalist's article is always his 'story.' Slang is often the key to a tendency. And it may be doubted if the picture idea is

not overdone when in the design of pulling the whole together as a piece of decoration a veil of gauze is stretched over the proscenium. The supreme piece of staging of recent times has been the nocturne in 'Don Gil of the Green Breeks.' It depicted in bright pink the back of a baroque garden-house of the Spanish type in the midst of a blue-green park in the twilight, with the mighty orange rotunda of the just-risen moon seen—just as in a kakemono from the Land of the Rising Sun—through the bare branches of a willow. It was a decorative translation of night in terms of the true coloured pictorial without the customary chiaroscuro.

Our modern architects of interiors know, as well as these scene painters, how to content our desire both for good disposition of spaces and colours, and for compositional unity.

One cannot assert, to be sure, that anything very revolutionary is being done in this realm: there have been good room-decorators in all periods arranging rooms in accordance with the needs and characters of their peoples. From the variety of their efforts modern interior

architecture can easily draw inspirations and, combining it with modern idea of comfort, construct delightful rooms and dwellings. I need only refer to such household names in the business world as Peter Behrens, Bruno Paul, Riemerschmied, Vandevelde, Schulse-Naumburg, etc., for firms which have accomplished first-rate work in this direction. Specialists must particularize further on the subject. All that is possible here is indication.

Meanwhile, as with the study of pictures, it is not so much the observation of what has been already accomplished, as the anticipation of new possible effects, that is important.

To make a living-room not merely comfortable, but also æsthetically charming, it is necessary to be familiar with the laws of spacing and also with their effect on form and colour. These laws are exactly the same for the room as for surface or for a picture except that in the case of the room two further considerations come into question: (1) its third dimension and (2) the effect of light and shade. The simplest laws of perspective may be assumed as known. As

far as this is concerned the principal thing is the meeting of horizontal lines in a focus. This for ordinary rooms lies beyond the field of vision: yet for narrow, very high wall-friezes, for ceiling ornaments, or for rectilinear patterns on floors, the tendency to meet must be taken into consideration. It could turn out, e.g., that a parquetry or carpet pattern might appear unorganic in a small room, because intended for a large one. A mistake might also be made in the colours. It is impossible, e.g., to have strong colour-contrasts on the ground, because these at once destroy the impression of flatness. Utitz remarks: 'A floor laid with red and blue tiles seems quite uneven, and the unpleasant sensation it creates will be acknowledged by all who have ever had the experience.' Again, a frieze that, put at a certain height, gives the wall of a little room an impression of definite dimension, will have to be put much higher in a large hall in order to have the same effect, because perspective in a longer wall diminishes the impression of altitude.

Colours too have their perspective which can either disturb or act advantageously.

A room with white walls and mirror surfaces will appear unquestionably larger than the same room with dark wood-panelling and red line-work. A room with bright green wallpaper will feel roomier than the same with dark yellow papering. A dark wainscoting of wood must reach higher in a hall than in a small chamber.

For the size of windows and doors a second principle in perspective must be taken into consideration, viz., the diminishing of the vertically-placed surfaces as they retreat from the beholder's eye and the closing of vertical lines upon one another. In a moderate-sized room the division of the wall by vertical lines is highly advantageous: the walls seem lengthened by the process. In a long gallery, however, or in an extensive hall, it is advisable to emphasize horizontal lines, or perhaps to emphasize the vertical lines in the lower part of the wall and the horizontal ones in the upper, as Peter Behrens has done in a music hall, where in emphasis of the division he draws black lines on a bright-coloured wall, such as Vienna industrial art uses in decoration. When this is done the black lines should be kept narrow: with

coloured ones, however, greater thickness is permissible.

The type of illumination in dwelling-rooms is far more important than it is generally considered. The most beautiful furniture often fails of its effect, because light falls on it disadvantageously. Painters often produce a restful light in their studios by draping the lower window panes. Such lighting is not only flattering for pictures, but for all rooms and for all objects contained in them. Dutch interiors owe their picturesqueness to their high windows. With us the lower parts of windows are often enough curtained, but the upper parts are not left free enough, and the mass of light admitted is not sufficient. The Dutch style is to be specially recommended for Chippendale furniture, with its thin chair-legs and highly polished surfaces: else every edge collects the sunlight. It is a regrettable fact that so many modern dwelling-rooms are only arranged for artificial lighting. Small rooms should be so arranged, but big rooms should be arranged for sunlight. In the small there should be walls of bright colours attuned in accordance with the laws of modern decoration, and with their surfaces broken up in

accordance with the laws of flat spacing (ie., without attempt at the rendering of solidity by the use of light and shade) so that the local tones of the colours may have their full effect upon the occupant. There should be cushions and covers in fine colours. The division of the walls should avoid any sharp suggestion of perspective. The furniture should be expensive in colour and material : it should consist of few and of good-sized articles, articles of interest on their own account and not as belonging to any particular style or period. Large saloons, on the other hand, should be arranged for the full play of sunlight. Their articles of furniture should be in groups, which should cast agreeable shadows. The pieces should agree in shape and colour, the ensemble they form be in a few fine shades which harmonise tastefully with walls and with carpets. When there is shadow there should be resonant colour-tones, and where there is light, fine grey reflexions. Under artificial illumination the good effect would not be lost if the colours were combined in sufficiently large masses, and if the materials did not conflict with one another. I must, however, refrain from expatiating any more

on the subject. There is rich material still, untouched in the sphere of our everyday environment. The flower-garden, e.g., is a favourable domain for the employment of a sense for colour and for the contrivance of means of indulging it.

Some words on the sense of style will not be out of place in peroration. This treatise is not the right place for a disquisition on the philosophy of art. Its purpose is purely practical, and this being so it understands by 'sense of style' ability to turn the properties of any form and colour to advantage in connection with the material most suited to it. This ability may be employed naively or with deliberate consciousness. It is naively employed when the possibilities of its expression are limited, consciously when the effect of every element in the production of a work of art is carefully considered. Naive sense of style is found in primitive peoples. It is born in them of innate need for a feeling of equilibrium which has never yet been disturbed by an over-roaming fancy. Primitive peoples are still possessed of time to give every simple article of use its ornament. To them a wooden

spoon is really a spoon of wood whose fitting ornament they feel out of the material. A surface ornament with them remains really on the surface, because their ignorance of perspective protects them from attempting a too solid representation of the object they wish to imitate. The strong primitive colours they use give actually a mosaic effect, because the many tones produced by mixing, which give an impression of lying above or below the surface, are still unknown to them, or, if known, are felt by them as dissonant, because their eyes have not yet learnt to discriminate. The same *naïveté* can be proved to be characteristic of their ears in relation to the notes of music.

When we contrast with the naive feeling that conscious feeling for style that, in spite of the most multifarious acquaintance with forms and with the possibilities of representing them, picks out with delicate niceness just the minimum necessary for the representation of the work of art it is engaged upon, we are astonished to discover that in the last resort the naive and the conscious feeling are one and indivisible. It is the old naive feeling that makes the most exquisitely refined artist

choose out of all the multitudinous riches of expression at his disposal, those appealing to the inborn need of equilibrium characteristic of universal man. Need for equilibrium is Nature's law for the filling out and for the dividing up of all the forms that the artist invents. But if the modern artist has the same way of conceiving as the most primitive of his ancestors, he is helped in the execution of his works by a will matured by centuries of old culture. Upon him—the present-day creator and pioneer in new paths of form and colour—others will follow who with sensitive souls and indomitable industry will work up his new forms and colours into style. We have to thank the creators who have preceded us for what we find to hand in firm-knit form and designate variously as Renaissance, Rococo, Empire, Biedermeier, and other styles. And the creators of nowadays will be to thank if the art of our time receives a form that endures and ever comes to be known as a style. Our day is not a day of great geniuses, but a day in which talent is rife. A great field of labour is open to its possessors. They can be at least forerunners, to make the ways straight and the rough places plain

for the more brilliant innovators of the future. But first the conviction must dawn that art is to be learnt, not only by visits to museums or by attendance at art-history lectures, but by a sense of the primitive elements which are indispensable to its creation. The logical connection of things must be grasped by the amateur or professional, before he can pronounce judgment on works of art or objects of art-industrial production. It is of more use to study the laws of colour and of space than to know the contents of all the galleries in Europe. In our times particularly, in these dismal days when there are so few occasions of cheer about us, the words of a great professor of the Philosophy of Law may usefully admonish us: 'Colour, like music, is one of the chief elements in the poetry of our time: and the more we make ourselves acquainted with it, the more our souls will be conscious of enrichment' (Kohler).

With these words in mind we shall approach with less of prejudice artists who have been endowed by Nature with a different feeling of style from our own and whose ways of self-expression are still foreign to those we have been brought up in: and in questions

of art-industrial practice, we shall be able to follow the dictates of our own artistic convictions without looking to right or to left to discuss what is the fashion of the moment. I hope and trust that these lectures will be a means of inspiration to all who aspire to a really catholic power of appreciation and to a really independent security in their judgment of works of art. I have meant them to contribute both to a harmonious cast of life, and to a refined comprehension of all that is great and noble in artistic creation.

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